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COLOR PHOTOGRAPH
by GENE LESTER
SEE PAGE 72

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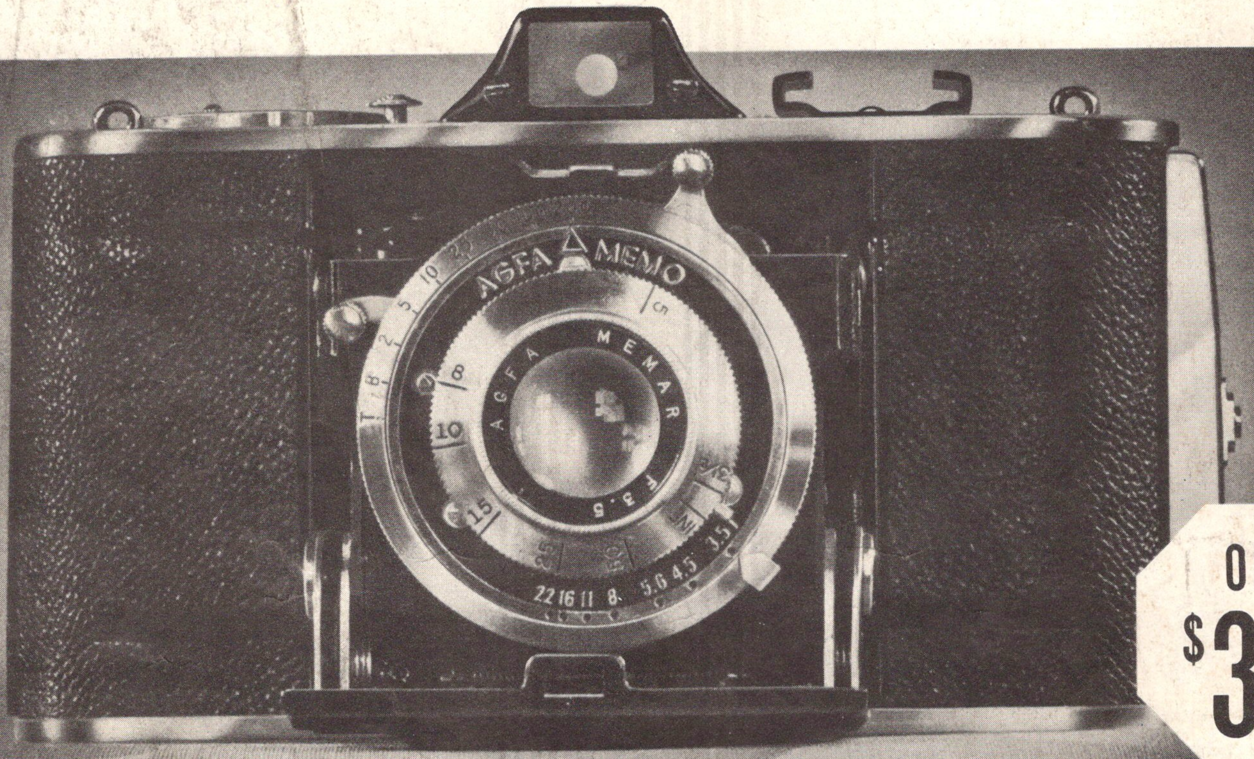
AGFA PRESENTS THE NEW MEMO CAMERA!



ONLY
$35.00

AGFA ANSCO Corporation is proud to announce a new 35mm. miniature camera. Precision-built throughout, the new double-frame Memo with f3.5 Corrected Anastigmat Lens is an outstanding value. Refined for compactness and solidity. Simplified loading. Exclusive film transport for rapid-sequence pictures. Versatile lens and shutter equipment. Beautifully finished.

Before you buy a camera, be sure to see the new Agfa Memo at your dealer's! All Agfa Ansco cameras, including the new Memo, are completely American made.

FEATURES OF THE NEW AGFA MEMO:

1. Takes 24 double frame (1 7/16 x 15/16) inch pictures on a standard Memo film cartridge.
2. Agfa Memar f3.5 corrected anastigmat lens, focusing from 3½ feet to infinity.
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7. Weight 17 ounces, dimensions 5 x 3 x 1⅝" (closed).
8. Brilliant direct-view finder, accessory clip, tripod socket, neck cord and eyelets.
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VELOUR BLACK—ILLUSTRO
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Soft (11) ☐ Normal (22) ☐
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Single Wt. ☐ Double Wt. ☐

Note: *Single Weight* is available in Grades 22 and 33 only.

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VOL. 29 No. 4 CHICAGO, ILL. APRIL, 1939

Bass believes:

that in spite of all the romance and glamour in this business the same sound rules apply here as elsewhere. We've got to be fair, square and liberal, and we've got to give every customer an even better deal than he expected to get. Sometimes this hurts our pocketbook a little . . . which explains, of course, why they continue to come back to the Camera Cross Roads of the World.

Charles Bass
President.

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3¼x4¼ R. B. Graflex, series D. 18 cm. Xenar F:3.5 lens.........**$115.00**
3¼x4¼ R. B. Auto long focus Graflex with 7½" K.A. F:4.5, at.........**$87.50**
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Bass CAMERA CO.
179 W. MADISON ST.
CHICAGO. ILL.

Styles in cameras change—but good workmanship and good lenses are never out of style—which if you read between the lines explains why BASS at the Camera Cross Roads of the World has on occasion some unusual values in brand

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New 2¼x3¼ Miroflex . . . with 12 cm. F:3.5 Tessar, focal plane shutter, speeds to 1/2000th of a sec., with film pack adapter and three holders. Formerly sold at $275. Bass special.........**$87.50**
Same as above but with 12 cm. F:4.5 Tessar, originally sold at $215. Bass special.........**$69.50**
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2¼x3¼ Voigtlander Range Finder Bessa, with 10.5 cm. F:3.5 Helomar Compur Rapid shutter, special at.........**$52.50**
6x6 cm. Reflecta twin lens, focusing reflex, with F:4.5 Triolar lens in Stelo shutter at.........**$12.50**
DeFranne Sport with F:3.8 Trinar Rodenstock, with case.........**$29.75**
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2¼x3¼ new model Speed Graphic compact. With 4⅛" F:4.5 Kodak Anastigmat lens, in new style Compur shutter.........**$111**
With 4⅜" F:4.5 Bausch and Lomb lens in new style Compur shutter.....**$116**
3¼x4¼ or 4x5 Speed Graphic fitted with 5¼" Carl Zeiss Tessar F:4.5 lens, Compur B shutter.........**$127**
Kalart Range finder installed—complete.........**$27**
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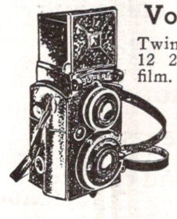
Mendelsohn Universal Speed Gun..**$25**
Abbey Press Flash Gun.........**$18.75**

Voigtlander Superb



Twin lens reflex . . . takes 12 2¼ square shots on 120 film. Automatic film transport. Compur shutter 1 sec. to 1/250th. Skopar F:3.5 lens special at $59.50
With Heliar F:3.5 lens $62.50
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and lay bare your repressions by asking for Cine—Still—Lens—Projection or what have you catalog. Thanks.

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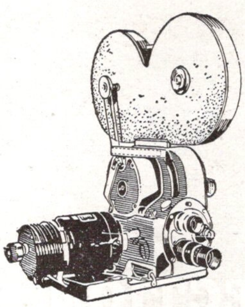

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Completely equipped at Bass for only (USA only).........**$935**
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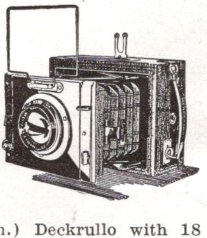
2¼x3¼ Zeiss Ikon Nettel
DECKRULLO



Focal plane shutter—1/10 to 1/1200. Tropical model of teak wood. Direct finder-precision focus—12 cm. Carl Zeiss Tessar F:3.5 lens—with lens cap, film adapter and one double ebony holder—brand new—list $135.00 at Bass.........**$69.50**
4x5 (and 10x15 cm.) Deckrullo with 18 cm. (7⅛") Zeiss Tessar F:4.5 . . . was $225 . . . at Bass.........**$79.50**
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Kalart Range Finder Model G—Installed and synchronized.........**$33.00**
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Bass CAMERA CO.
179 W. MADISON ST.
CHICAGO. ILL.

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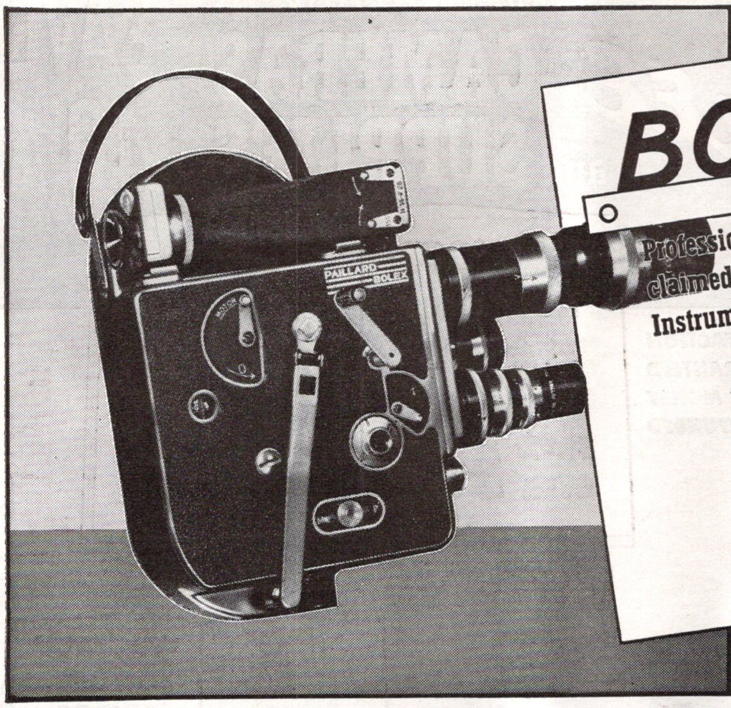

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Professional BOLEX Cameras for Critical Amateurs are acclaimed by users to be the World's Finest Precision Built Instruments in the 16mm and 8mm Motion Picture Field.

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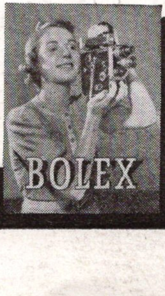

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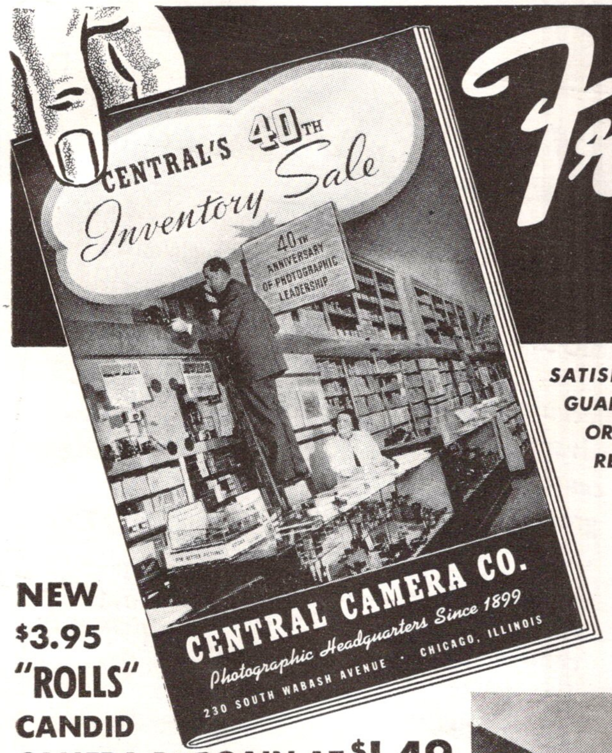
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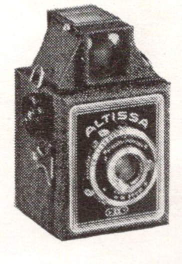

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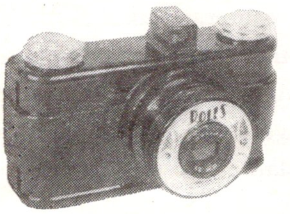

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$6.95	—ALL FOR $4.95

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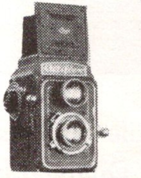

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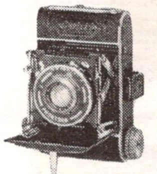

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ANNOUNCING THE 1ST WORLD-WIDE ROLLEI CONTEST!

FIRST PRIZE $200

and 499 other CASH PRIZES!

On this, the 100th Anniversary of photography, Rollei enthusiasts are called to the colors. 500 Cash prizes will be awarded to the 500 winning prints. Total prize money, at the current rate of exchange, will run over $4,200.00. Many of the winning prints will be reproduced in a magnificent book called, tentatively, "The Magic of Light." All of the winning prints will be exhibited in the U. S. A. and abroad.

The rules of the contest are so broad that everyone stands an equal chance. Start work on *your* prints *now!*

ROLLEIFLEX

More than 2,000 recognized dealers throughout the country carry or can stock Rollei cameras. Ask your neighborhood dealer for Contest Entry Blanks and full information about these remarkable cameras, or write:

JUST FOLLOW THESE SIX SIMPLE RULES:

1. *Subject Matter:* No limitation as to the subject or number of pictures submitted (but they must be new—never before reproduced—and made with Rolleiflex or Rolleicord cameras).

2. *Prints Submitted:* must be enlarged to at least 4¾ x 4¾ but not larger than 12 x 12 inches —and *not mounted.* (Color transparencies are acceptable).

3. *Rights:* All prints awarded prizes become the property of the makers of Rollei cameras, for exhibition and reproduction purposes. The competitors must agree to loan the negatives of all prize-winning pictures to us for one year. Color slides winning prizes become the property of the sponsors of this contest.

4. *Releases:* A primary condition is that all contestants have full reproduction rights—especially the consent of people appearing in the pictures. In other words, the sponsors decline all liability on claims by third parties and it is assumed that the photographer has releases signed by models or subjects.

5. *Deadline:* All prints must be mailed by Aug. 31st, 1939.

6. *Entry Blanks:* May be obtained from your dealer, or direct from the distributor. All prints submitted by contestants in the U. S. A. should be mailed to address below.

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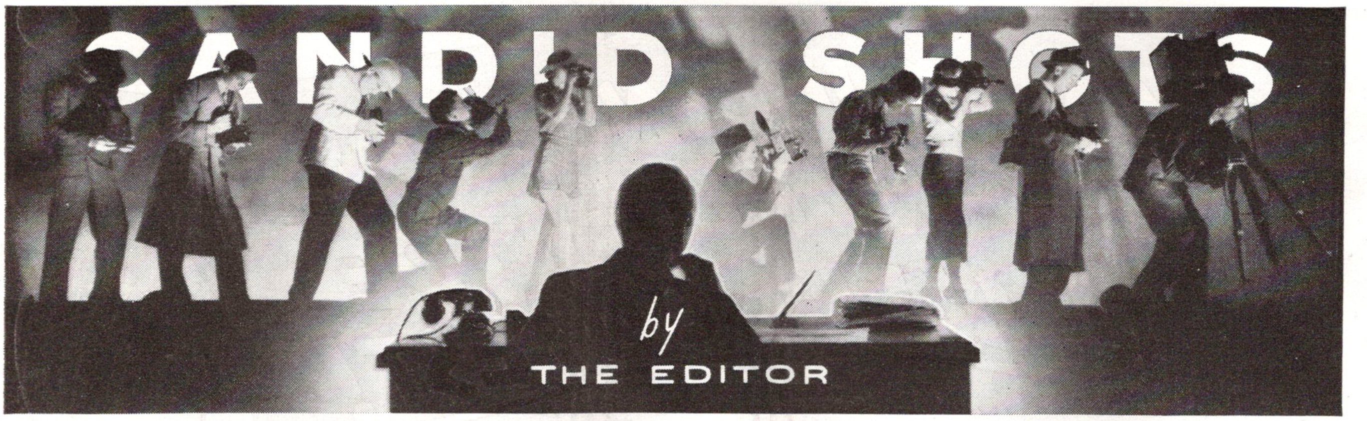


CANDID SHOTS

by THE EDITOR

IT'S time to let the cat out of the bag regarding the Second Anniversary Issue of POPULAR PHOTOGRAPHY Monthly. We won't tell you all but here are a few pointers to prove our contention that the May POPULAR PHOTOGRAPHY will be an issue not only worth getting but also keeping.

The Second Anniversary Issue will contain the first and only complete directory of all types of photographic products on the market. It will list and describe cameras, movie cameras, enlargers, films, movie films, papers, lenses, exposure meters, projectors for still and movie film, filters, tripods, photographic chemicals and a wealth of other photographic products.

No single camera store could possibly stock all of these items and there has been no single source of information on them—until POPULAR PHOTOGRAPHY decided to create this directory which will be published as part of the May issue.

We said "as part," even though the directory alone will run several dozen pages. Beyond that we shall bring you articles by a greater number of famous photographers than have ever before appeared in a single issue of any photographic magazine.

OUR new contest, announced on page 54 of this issue, opens an even wider field to the amateur than did the Pet Picture Contest, results of which are announced on pages 52 and 53. Its subject is "Charming Children" and as everybody has taken pictures of children, mostly because they thought them charming, none of our readers should experience difficulty in lining up entries for this contest.

We're letting ourselves in for a terrific avalanche of pictures but then we consider it our job to locate good pictures which can be held up as shining examples for the amateur.

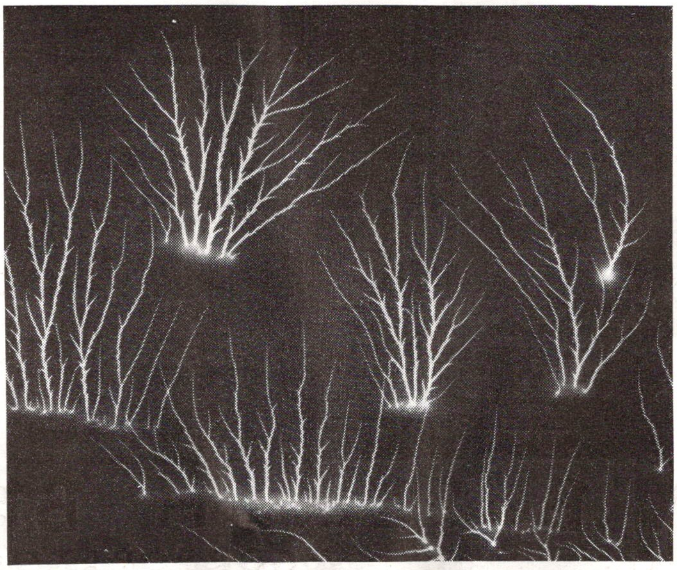
SPEAKING of contests, Mrs. George Jennings of Long Beach, Calif., wants to know why most contests refuse to return pictures even if stamped, self addressed envelopes are enclosed. The reason is that handling of the mail would involve too much labor.

POPULAR PHOTOGRAPHY has been breaking its own contest rules and has returned pictures even where self addressed envelopes were not enclosed. In future, however, we too will have to stick rigidly to our rules. No stamped and addressed envelopes—no pictures.

Answering others of Mrs. Jennings' questions, it is of course illegal to syndicate pictures submitted in a contest without the contestant's permission. Further, it is completely ethical to sell pictures which have been entered in a contest after the contest is over unless the contest rules specify that they become the property of the contest organizer.

THE *Chicago Tribune,* for years a pioneer in the field of color photography, recently printed the first "news picture" in color. The total elapsed time between taking the color photograph with a one-shot camera and its appearance in print was 8 hours.

Discussing this feat, Col. Robert R. McCormick, publisher of the *Chicago Tribune,* told us that color photography, in his opinion, is far enough advanced to produce suitable "copy" on practically any news event. Difficulties arise in engraving, in finding suitable newsprint and inks for reproduction and, above all, in the size of the presses required. Each color used requires a separate press unit. If four-color illustrations were to run on every page of a large newspaper, presses would have to be built that would dwarf anything now in existence.



This picture shows neither lightning nor a negative of trees but the unique effects of static electricity on film. It was sent us by Bernard Mulnard of Rochester, N. Y., who found it on unexposed film in a filmpack. Friction caused the static.

STILL, the mechanical problems of color printing are fundamentally solved. Many publications have other than mechanical reasons for not using color photographs.

So for instance the *New York Times.* Victor Talley, editor of the Sunday Picture Section of the *Times,* tells us that worth while subjects for color photography and color reproduction are few and far between. Most subjects and the majority of color photographs don't justify in Mr Talley's opinion the great cost involved in reproducing them in color.

IN a long and extremely interesting talk with great photographer Anton Bruehl we were told that practically everything is wrong with amateur photographers and with the majority of professionals as well. The main trouble is that photographers of both categories know far too little about photography. Stumped, we asked Mr. Bruehl to explain his views in an article and he promised to write for us in one of the next issues on the subject of *What Photographers Should Know.*

APOLOGIES to Murray Becker, the A. P. photographer whose picture of an oil fire appeared in our February issue. Our caption stated that he used an exposure meter and ever since he has been the subject of ribbing by his colleagues. Mr. Becker didn't use any meter in taking this shot.

Having done our duty, let us tell Mr. Becker and his colleagues who think it beneath their dignity to use exposure meters that many of their good shots turned out good not because they are such infallible experts at guessing exposures but because modern films—fortunately for them—have sufficient latitude to permit quite

(*Continued on page 95*)

APRIL
1939

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NUMBER 4

Popular Photography

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Contents

Photographing the World of Tomorrow.....10
Darkroom in Your Suitcase.....14
Assignment: War.....16
From a Doctor's Album.....18
Take Pictures on Paper.....19
Pictures, Pictures Everywhere!.....20
Soft Focus for Pictorial Quality.....22
Let's Make a Still Life.....24
Learn Darkroom Technique from Hollywood.....26
Photograph Your Valuables.....29
Focus on Mexico.....32
World's First Camera Club.....34
Make Your Own Filters.....35
Emelie Danielson Chose a Camera Career.....36
Tips for the Free-Lance.....38
Stills from Your Movie Frames.....51
Winners in POPULAR PHOTOGRAPHY Pet Picture Contest.....52
Announcing the "Charming Children" Picture Contest.....54
Build This Inexpensive Spotlight.....57

Candid Shots by the Editor..... 8
How to Avoid Reticulation.....13
Picture Analysis by Nicholas Ház.....28
Thoughtful Portraiture.....55
Sepia Toning.....56
A Foot Switch for Your Enlarger.....58
Put Clouds in Your Pictures.....59
Pictures from Our Readers.....60
History of Photography—Cartoon.....62
Print Criticisms.....63
Questions and Answers.....64
Letters to the Editor.....64
New Tricks for Camera Owners.....65
Trade Notes and News Items.....66
Calendar of Photographic Exhibitions.....66
What the Camera Clubs Are Doing.....68
A Glossary for Photography.....70
Notes on the Salon Section.....72

Salon Section

ABRAHAM LINCOLN by Alfred T. Palmer.....39
SURF by Ray Atkeson.....40
TILLERS by Akhtar K. Syed; J. W. McManigal.....42
SPRING by Harold Harvey; Frank Fenner, Jr.....43
DANCERS by Remie Lohse.....44
APRIL by Leo Nejelski.....45
FROM INDIA by Stanley Jepson.....46
DOORWAYS by Paul Faris; Pragher.....48
STATIONS by Harvey Falk; Kingsley W. Given.....49
STUDY by David C. Kent.....50

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Photo by Eleanor Parke Custis who last year exhibited 261 prints in 77 salons. Read her story in the May issue.

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Photographing THE

by EMMA H. LITTLE

Photographs, except below, by Richard Wurts

The colorful and varying vistas of the New York World's Fair offer a wealth of photographic possibilities to the amateur.

WORLD'S FAIR 1939
1939

The spirit of the New York Fair is symbolized by the pennoned administration building.

A NATIONAL holiday for camera fans begins on the 30th of April when the World of Tomorrow opens its nine gates. All of them lead into the New York World's Fair covering over 1200 acres dotted with buildings containing exhibits which will convey to visitors some idea of the progressive design of living that will shape our everyday life of tomorrow. Those who saw the Century of Progress at Chicago can take up with things where that Fair left off.

Here in the Flushing meadows, camera shutters will be clicking to the unique experience of taking pictures of the future. A medley of architecture planned with basic unity, design of many applications, paintings, and sculpture will make for fascinating experiments, even for case-hardened photographic experts.

The colors of the Fair are as riotous as those of a midsummer garden and cluster about the central Theme Structure, the Perisphere and Trylon, with a gay abandon that exceeds the dreams of color photographers. Whatever camera you use, this glimpse of the World of Tomorrow is yours for black-and-white and color stills or movies that will bring it back home to those who couldn't attend.

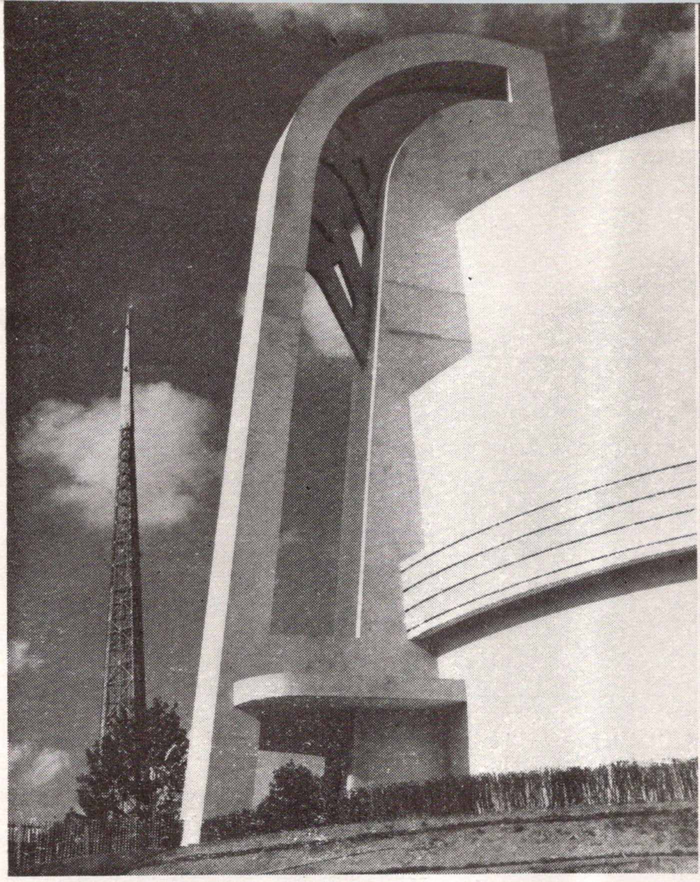
The widely heralded Perisphere and Trylon will be the target of all cameras. Both structures are finished in "pure" white and form the thematic center from which all the colors of the rainbow are scattered, symbolically, over the entire Fair grounds. Radiating about the center are Constitution Mall, avenues, and courts that offer excellent vistas from which the 200-foot Perisphere and the 700-foot Trylon can be brought within camera range.

The level of the low buildings is broken by a skyline of fully grown trees rooted in made land, above which tower many interesting pylons and architectural fins, the best focal points for photographers. During my intermittent visits to the Fair, I have constantly thought in terms of pictures, and suggest your concentration upon arresting details, rather than attempts to take many bird's-eye views, to which only aerial shots can do justice. General shots, however, can be taken satisfactorily from numerous points of elevation. The five bridges in the area are places of the best vantage.

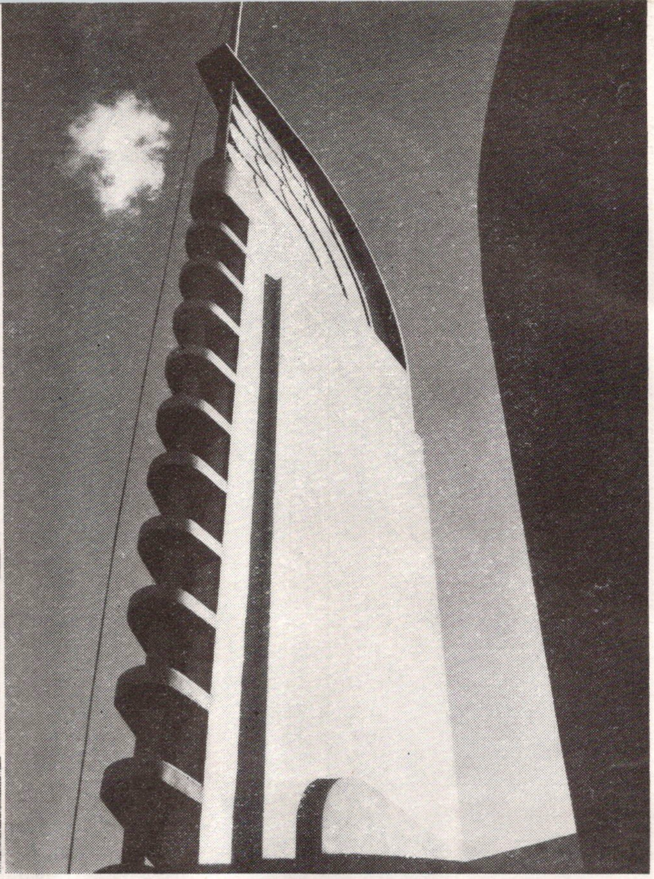
Yacht-like lines distinguish the Bridge of Tomorrow, connecting the Administration Building with the central exhibit area. Its "hull" is finished in varnished fir and the steel work is painted blue. This one is a prize for pictorial effects.

The one-man exhibition by Richard Wurts at the Museum of the City of New York demonstrated what can be done with World's Fair subjects. Mr. Wurts almost lived at the Fair grounds while he

An aerial view of the exposition during construction shows the vast area it covers.



The Electrical Products Building presents a glimpse of the future.



A light red filter was used to contrast the pylon and sky.

WORLD OF TOMORROW

was making his large collection. His Class A photographs dramatically interpret the forms of symmetrical beauty that are waiting for your lens.

If it is pylons you are after, you can begin before you enter. Two of them flank the entrance on the Western Side and start you off with a made-to-order pattern, centering on the Theme Structure. Once inside the gate, the Star Pylon catches the eye immediately. It is made of wood rising in a colorful shaft of tawny orange topped by a glittering star. This pylon will be a favorite subject because of its sheen and softness of tone.

The hairpin neon tower on the Textile Building is of lacy steel rising above the trees that cluster at its foot. A combination of its high curves with tree tops makes a stunning print. Another sky shot that shouldn't be missed is the study in curves found at the top of the Production and Distribution Building, where radiating whirls of shining steel catch the sunlight.

Four golden stalks of wheat form one of the simplest and most effective decorations in the skyline. These are located at Food Building, No. 3. Effectively done, this will be one of the best pictures you ever took and is a natural for a Christmas card for 1939. On second thought, the children of the family might prefer Borden's golden cow on her pedestal in the sky, that signals the way to the rotolactor and plenty of milk for the wayside lunch.

When it comes to buildings, you will have to pick and choose, but don't fail to have a look at the entrance to the Hall of Marine Transportation, where twin ship prows, each 80 feet high jut out, for all the world like ocean liners. Here you will pause for several shots and should succeed in getting pictures with majestic effect.

Curving fins of the Electrical Products Building and the Chrysler Building cut the sky with varied sweeps of line. These bold lines combined with intricate detail of construction will again challenge your skill.

Clouds are important for many of these skyline photos and since they aren't guaranteed by the Fair Board you might be looking over your stock of cloud pictures. Texas and Arizona clouds will do the trick for you. Only scientists will feel badly if you combine a Western morning cloud with late afternoon New York sunlight.

Statues are rampant. True to tradition, many visitors will want to take home George Washington who stands on Constitution Mall. This is the largest portrait statue of modern times and stands 65 feet high, including a 15-foot base. Fortunately this notable statue is so placed that it can be photographed with pleasant vistas and varied backgrounds. Four other heroes of the Revolution will round out this historic series for you, if you can photograph murals. They are horseback studies of LaFayette, Von Steuben, Count Rochambeau, and Kosciusko, all additions you should have for your American history scrapbook.

You will find the urge for color sweeping over you by this time. You can't miss it anywhere, but I urge you to seek out the murals. One view of unparalleled effectiveness can be taken from the plaza about the Perisphere, looking down the Court of Communications Building. In the foreground is a dynamic statue, *Speed*, flanked by two Chinese-red pylons and in the background, filling the space between the pylons, a vivid color mural, *Means of Communication* by Eugene Savage, completes a double color effect of art and architecture, that you will have to come to the Fair to find. Blues, yellows, and reds are the key colors.

An amusing mural on the Electrical Products Building will arrest your interest and you won't pass it by. An abstractionist design of glowing colors, it is done with a looseness of treatment that makes for a poster effect. Sports, foods, health, science, and industry are among the other mural subjects. The softer mosaic murals make surprisingly good photographs, and don't neglect them because their effects aren't bold.

What could be more fun than following the children in your party through the ingeniously designed Children's World? What a souvenir of the Fair, to show them in streamlined slides, swings, and other play devices, or to follow them to the entrance of the cave, or to climb the seething volcano! This tour should re-

These conventionalized stalks of wheat *which decorate the Agricultural Building* suggest a number of picture possibilities. Taken from a low angle, this particular shot makes an especially decorative panel.

At night these lacy steel towers on the Textile Building are a blaze of neon lights.

Swirling lines in steel and cement offer you opportunities for unusual studies.

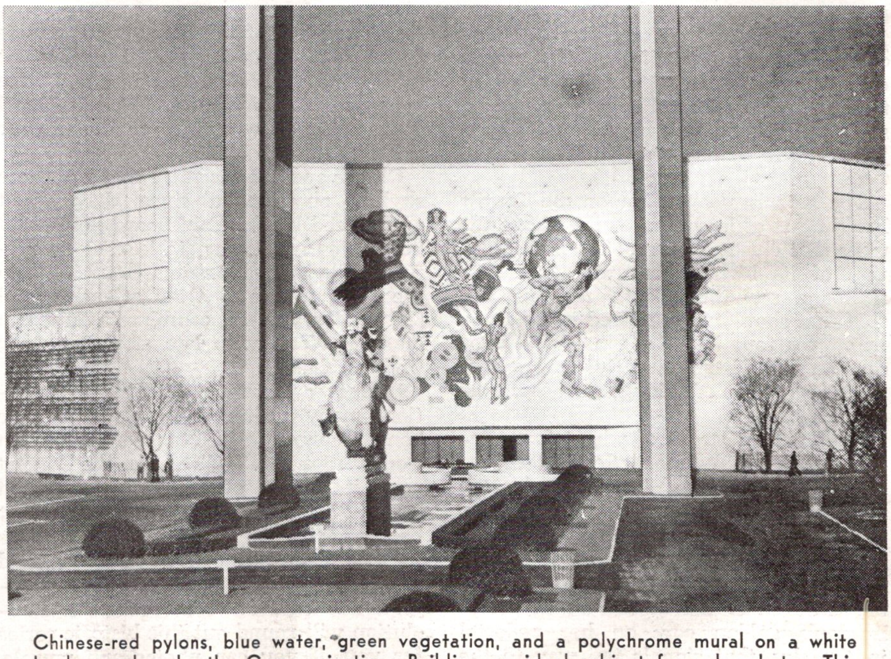
sult in a home movie that doesn't make guests squirm, look at their watches, and say it is getting late.

Fountains of metals and fluorescent glass with all sorts of intricate water plays are placed throughout the landscaped spaces. Lighting effects at night will make them distinctive parts of the evening splendor.

The decorative Baboon Fountain in simple and stylized modeling, shows five baboons on pedestals spaced about a 22-foot circular pool in the center of which a baby baboon is submerged by sprays of water. Children will linger here, and you will too, for there is something appealing in the ugly faces of these distant kinsmen.

The final test of your proficiency in color might be a movie of the Fire and Water Spectacle shooting into the night. This is something "colossal and stupendous" and lasts for half an hour. The play of fire and water from a lagoon is synchronized with sound and music. Fountain jets play under a revolving light scheme while towers of flame rise 150 feet above the pool. The show over, you can go to Meadow Lake in the Amusement Zone to see the fireworks.

I don't think you will. You'll go back to your hotel or your long suffering New York relatives where you will probably clutter up the bathroom with darkroom equipment while you eagerly develop and examine the day's "catch." Then you will want to be around the next day to take your masterpiece at the moment the Trylon casts its shadow across the Perisphere.—



Chinese-red pylons, blue water, green vegetation, and a polychrome mural on a white background make the Communications Building an ideal subject for color shots. This colorful setting is but one of many that will make the Fair a photographer's delight, whether he comes equipped with an inexpensive box camera or a high priced outfit. In addition to the wealth of color and design there will be plenty of action for movie makers.

HOW TO AVOID RETICULATION

by J. JULIUS FANTA
Amateur Photographer, Milwaukee, Wis.

Temperature control of all processing solutions is most important to obtain perfect negatives.

ONE of the major catastrophies encountered by amateurs who do their own developing is reticulation. This is the term applied to the phenomenon wherein the emulsion separates from the film base. Some of the effects are illustrated on this page.

It appears in several forms. Most generally, the emulsion of the film assumes a creped appearance. Sometimes it looks spotted, after blisters have caused bits of the gelatin emulsion to peel from the film base. It may attack the entire surface of the film or only part of it.

Reticulation, of course, is definitely not the fault of the film. No film is immune to it if due care is not taken to prevent it when conditions necessitate.

When the room temperature is high during the winter, reticulation can occur as frequently as in summer. In southern climates, and in the tropics in particular, it is a constant problem due to year-round warmth.

Film emulsions can withstand solution temperatures up to 75 degrees with safety. This is 10 degrees higher than normal 65-degree developing temperature.

If the room temperature is warmer than 75 degrees, in winter or summer, the temperature of the developer, short-stop bath, and fixer will soon assume that temperature unless proper precautions are taken. It would be foolish to attempt development at such a temperature because reticulation is then inescapable.

Although film can stand 75 degrees without reticulating, don't work by narrow margins. Play safe and cool the solutions down to 65 degrees, especially for tray development. If the room is considerably warmer, cool solutions will take a rapid temperature rise before the darkroom job is completed.

Everything should be ready before the solutions have been sufficiently cooled. Then development can be started at the lowest practicable temperature (65 degrees) and be completed before the solutions become warm enough to cause reticulation.

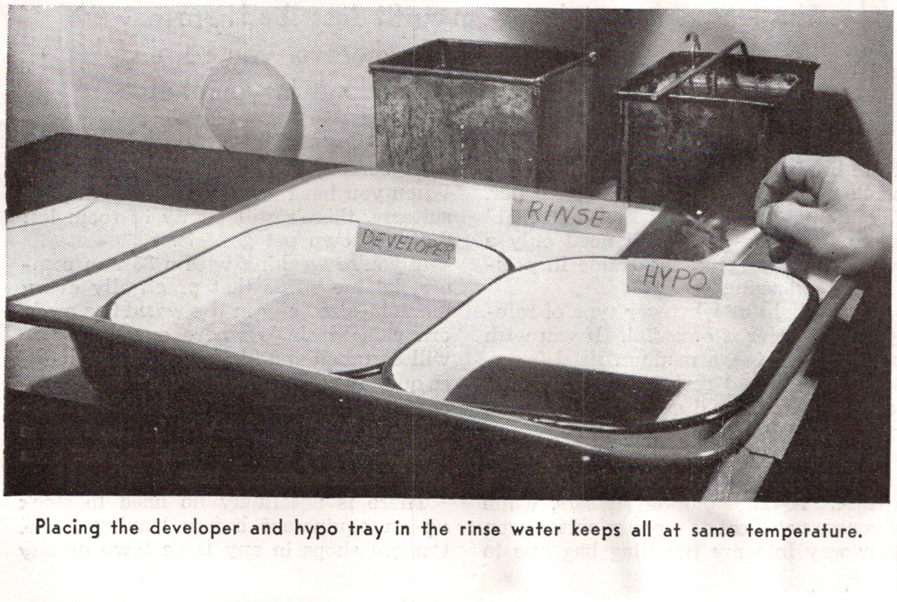
Handling film with great care in high temperatures is the most convenient way of avoiding reticulation. Cooling down the developer is not enough. The developer may be sufficiently chilled to preserve the emulsion, but the short-stop bath and fixer, if not cooled, may curl or frill the emulsion.

If the hypo is considerably warmer than the developer, it causes even worse reticulation than the warm developer would. It is always advisable to use a chrome alum rinse for the short-stop. The chrome alum hardens the emulsion and renders it immune to reticulation in the hypo.

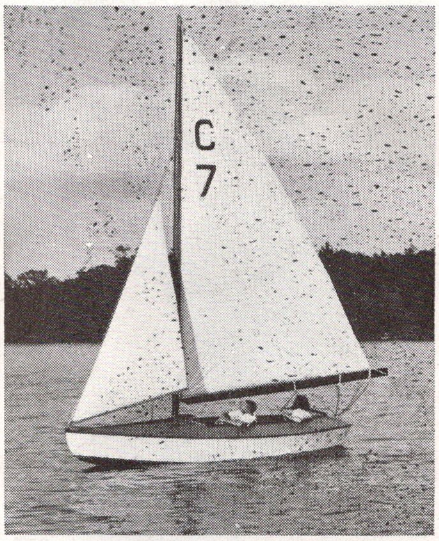
Another good precaution against reticulation is to use dilute acetic acid in the stop bath. A half-ounce to the quart is sufficient to thwart heat ravages.

If the darkroom is constantly plagued by heat, special developers that make the film impervious to reticulation should be used. Recommended is the Panthermic (all-temperature) developer known as

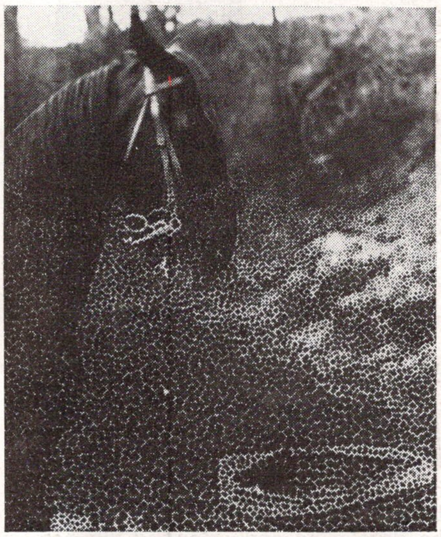
(Continued on page 103)



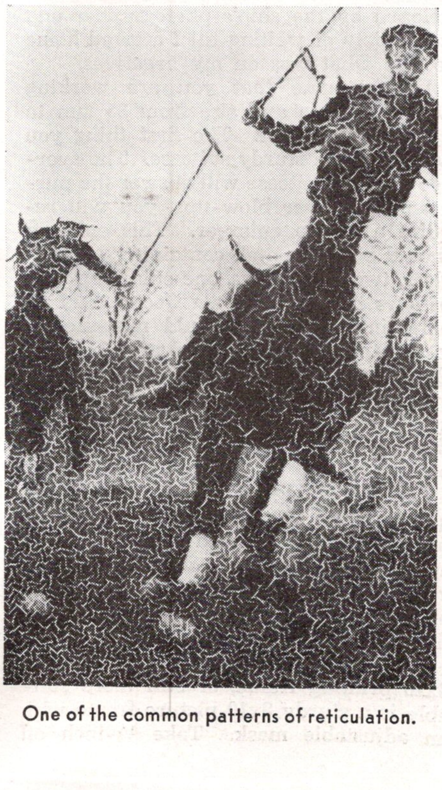
Placing the developer and hypo tray in the rinse water keeps all at same temperature.



Overheated developer caused blistering.



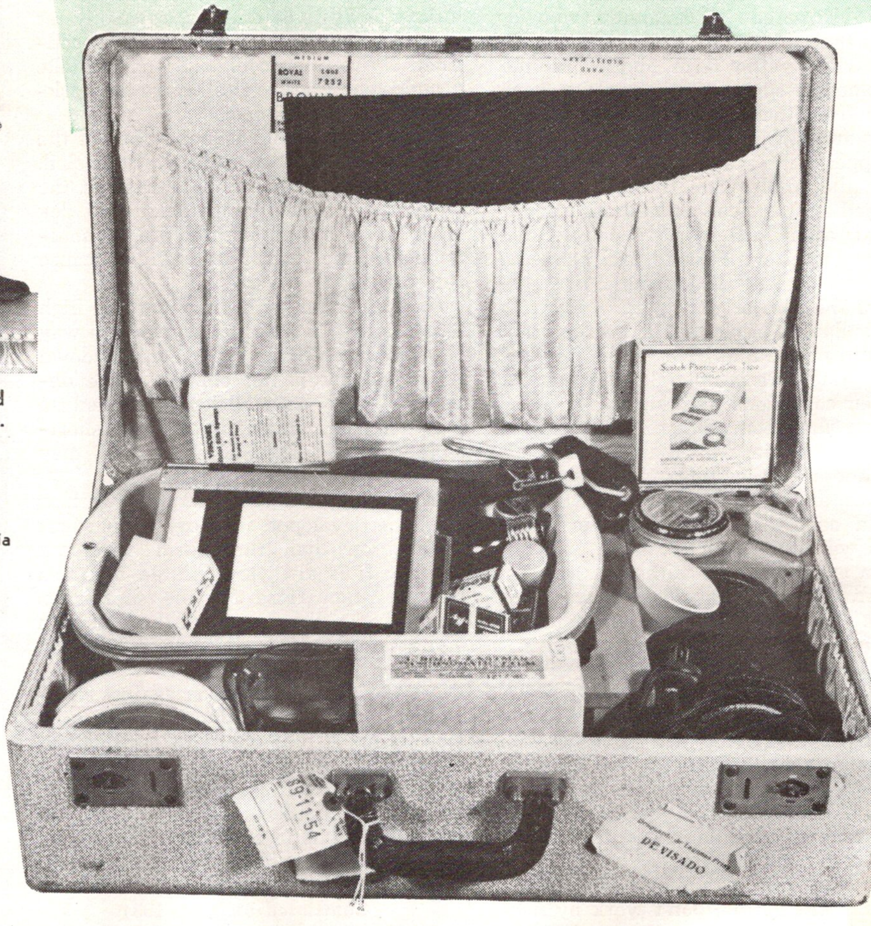
Only part of the negative is affected here.



One of the common patterns of reticulation.

Darkroom In Your Suitcase

The author and the darkroom suitcase she carried with her on an extensive trip around the world.



The light, compact darkroom outfit described here may accompany you on your travels wherever you go, and developing and printing can be done in your hotel.

by PATTY de ROULF

Amateur Photographer, Stanford University, California

IF you're going on a trip, take your darkroom in your suitcase. That's just what I did last year on an eight months' tour around the world. With little inconvenience I was able to do all the developing and enlarging my heart desired. There was none of the usual disappointment of having my films developed by the ship's photographer and no anxiety of waiting till I arrived home to find what was on my negatives.

Let's assume that you are working with a camera any size from 35 mm to a full vest pocket. The first thing you will need is a sturdy suitcase. The average 21-inch suitcase will answer the purpose. For your blow-ups, you will require a simple enlarger. This enlarger should be horizontal, containing groundglass, two condensers, one enlarging lens, bellows for focusing, a reflector, and an enlarging bulb. It should measure no larger than 6"x6"x12" and may be purchased or it can be constructed in a few evenings. Of course, you will not require an enlarging lens if you can use the lens from your camera for this purpose.

For developing and printing you'll require three enameled trays for 8x10 prints. Next, you'll need about five packages of 8x10 paper of your own favorite variety. Then take along a small supply of film and paper developer, hypo, and film.

To hold the enlarging paper, get an 8x10 printing frame, or *still* more suitable is a sturdy 8x10 picture frame with an adjustable mask. Take ¼-inch off of the back of the short end of the frame to allow room for slipping in the paper. Nail a piece of wood about 10"x12"x1" across the back and you'll need only a book or two to prop the frame in position for enlarging.

A ruby light or whatever type of safelight you prefer is essential. If you wish to do ferrotyping, a medium sized ferrotype plate should rest at the bottom of your suitcase. You'll need your squeegee roller. And don't forget that handy viscose sponge. I cut mine lengthwise, making two sponges and more absorbing surface. A large pair of scissors, while of course not ideal as a paper cutter, won their way into my traveling bag due to their comparative light weight and size. When you have all these articles in your suitcase, there's still plenty of room left for your own pet gadgets.

If you're working with a 35 mm camera, let me stress that practically every medium-sized city in the world has modern camera shops where excellent care will be taken and films will be developed as quickly and cheaply as at home. However, if you prefer to do your own developing because you will be too remote from any city, I suggest taking your own tank and a changing bag.

There is absolutely no need to stock up on equipment before leaving home. Camera shops in any large town or city

This picture of the Tower Bridge in London was developed and printed at the hotel.

have plenty of fresh supplies that will meet your demands.

On one occasion I developed films while I was crossing the equator. This may seem a ridiculous time to have chosen, but I was anxious to see what was on my negatives. I ordered a pitcher of ice one evening and locked myself up in my cabin. I prepared the developer and hypo with only about two-thirds the usual amount of water. Into each tray I dropped a bit of ice. I put a ruby light in the socket (I was using ortho film), turned off the other lights, and began my work. Referring to a booklet on tropical development, I decreased the developing time according to the temperature. And in order to prevent the temperature of my chemicals and rinsing water from rising, I continuously added chunks of ice.

Perhaps you have noticed that I have listed but three trays. I've found that there is no need to carry along a tray for a final washing. Both films and prints may easily be washed in basins or bath tubs.

After my negatives were thoroughly washed, the next problem was to get them dry as quickly as possible. The moisture of a tropical sea is death on film. But as practically every cabin is supplied with an electric fan, I hung the negatives across the room on an improvised clothes line. They blew in the breeze for two or three hours while I went on deck to dance to the ship's orchestra. When I returned, I discovered four perfect rolls of some of the best negatives I had ever produced.

One of the two things to watch in tropical development is that the solutions and wash water are never allowed to get too warm. If they should, they will cause the emulsion on the film to soften and run. The other important point is to dry your film as quickly as possible and keep it wrapped up well. Not only is the moisture dangerous, but while at sea, the salt air seems to have a grain producing effect.

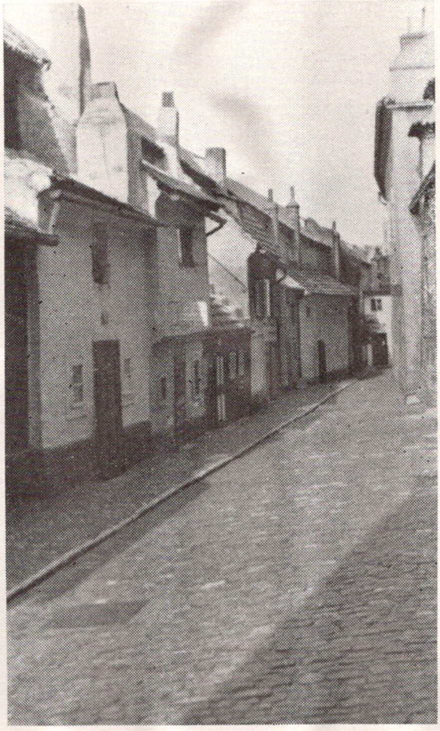
If you're going into tropical seas, it is a good idea to wrap all your film well in several layers of newspaper and see that the bundle is placed in a cool spot. Although this is not essential, it is a safeguard that I have always successfully applied. [Films may be purchased in tropical packing also.—Ed.]

I was in Rio de Janeiro when I decided to take a few evenings off for enlarging. After studying my hotel room thoroughly, I decided the bathroom was the best place to set up my portable darkroom. There was plenty of space and running water. I blocked out the light from a small window with the aid of two bath towels and some adhesive tape. A double socket, purchased at one of Rio's many dime stores, solved my lighting problem. The enlarger was set on one end of a piano bench and the printing frame was propped up with the telephone directory at the other end. My trays lay about me on the floor and my paper and negatives were on chairs be-

(*Continued on page* 111)

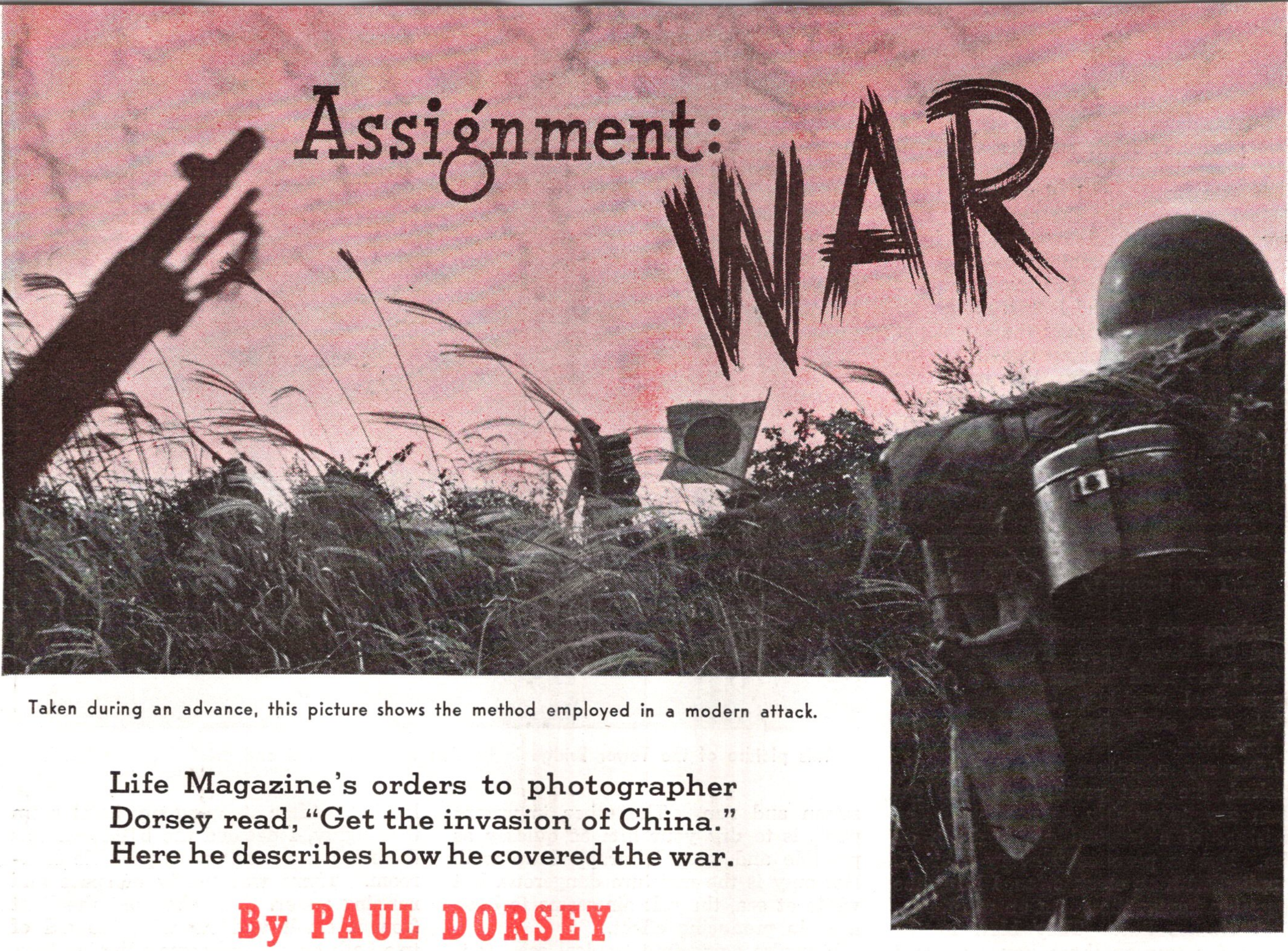
Snapped in the Andes, this picture was developed and printed in a Buenos Aires hotel.

A lonely street in Prague, Czechoslovakia, printed in a hotel bathroom in Berlin.



Snapped on the wharf at Callao, Peru, this picture was printed in a steamship cabin.

Assignment: WAR



Taken during an advance, this picture shows the method employed in a modern attack.

Life Magazine's orders to photographer Dorsey read, "Get the invasion of China." Here he describes how he covered the war.

By PAUL DORSEY

Pictures by the author for LIFE

The author and a geisha girl.

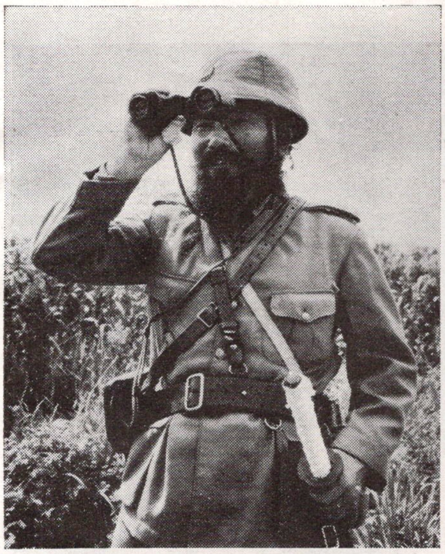
COVERING the war in China for *Life* was not an easy assignment. Putting the experiences of that trip into words is even more difficult. Writing is not my game. Photography is.

As you all must know, different types of assignments call for different kinds of equipment. It was the intention of the editors of *Life* that the greater part of my job was to live and sleep with the Japanese Army in the field during the seige of Hankow. This required that all my camera paraphernalia, as well as clothing and sundry supplies, be carried in a knapsack. Consequently a weight restriction was necessarily and voluntarily imposed.

After a careful survey of the types of pictures I would be required to make, and the length of time to be spent in the field, I narrowed my choice of cameras down to three—two Model II Contaxes, and a Rolleiflex. For the Contaxes there were five lenses: ƒ 1.5 (50 mm.), ƒ 2 (50 mm.), ƒ 2.8 (35 mm.), ƒ 2 (85 mm.), ƒ 4 (135 mm.). One of these cameras was

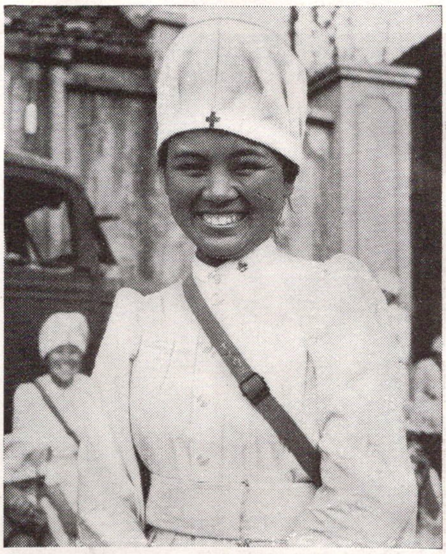
Exuberant Japanese troops leave Tokyo to embark for China.

An excellent shot showing the types of men fighting at the front.



An unusual type of Japanese officer whom Dorsey photographed deep in the war zone.

Grim symbolism—the booted heels of the aggressor on the ancient soil of China.



Few pictures of Japanese Red Cross nurses have been seen, but Dorsey got one.

to be used for Kodachrome, the other for black-and-white. Both were fitted with Jacobson synchronizers, used extensively during the past year in making color covers for *Time—Life's* companion publication.

Also included in my final list were: lens tissue, yellow-green and light red slip-on filters (Zeiss), Scotch tape, changing bag, EK M.Q. developing tubes, light machine oil, extension cords, small reflectors for indoor flash work, and a small set of tools for emergency repairs.

Although the departure from New York was made on only two days' notice the equipment was carefully checked, the lenses cleaned, and the synchronizers given a final adjustment. On sailing day a complete list of everything carried was handed the Collector of Customs at San Francisco to avoid discussion and possible payment of duty when re-entering the country.

I carried 150 rolls of Agfa Superpan Press for the Rolleiflex, 150 rolls Agfa Supreme for the Contaxes, plus 50 rolls of daylight type Kodachrome, two dozen rolls of 35 mm Panatomic-X film, and four cases of No. 2 Wabash Superflash bulbs, which incidentally were all damaged in transit, despite precautions.

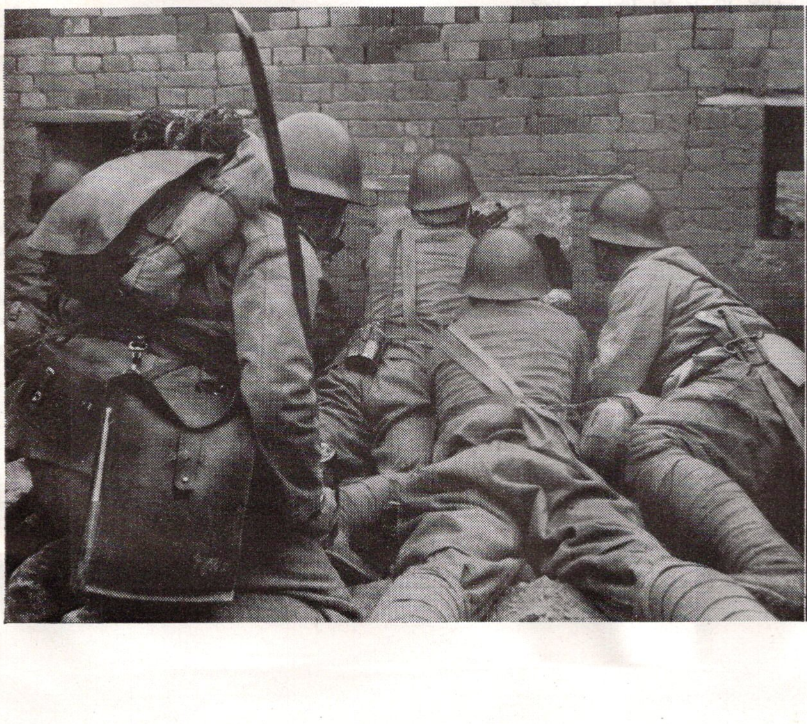
With me on the trip went Victor Jurgens, energetic young *March of Time* cameraman, whose equipment, while far heavier and bulkier, was also held to a minimum, consisting only of one spider-headed Eyemo, four lenses, including an *f* 1.9 eight-inch telephoto, a light tripod, made from the base of a surveyor's transit, twenty thousand feet of Dupont Superior film, two thousand feet Agfa Ultra Speed, and a set of portable Johnson Ventlites.

Briefly our assignment was this, "Get a complete record of present-day Japan —show her industries, agriculture, cultural development, the customs and home life of the people and, last but not least, the invasion of China, how it is being done, and the kinds of troops who are doing it."

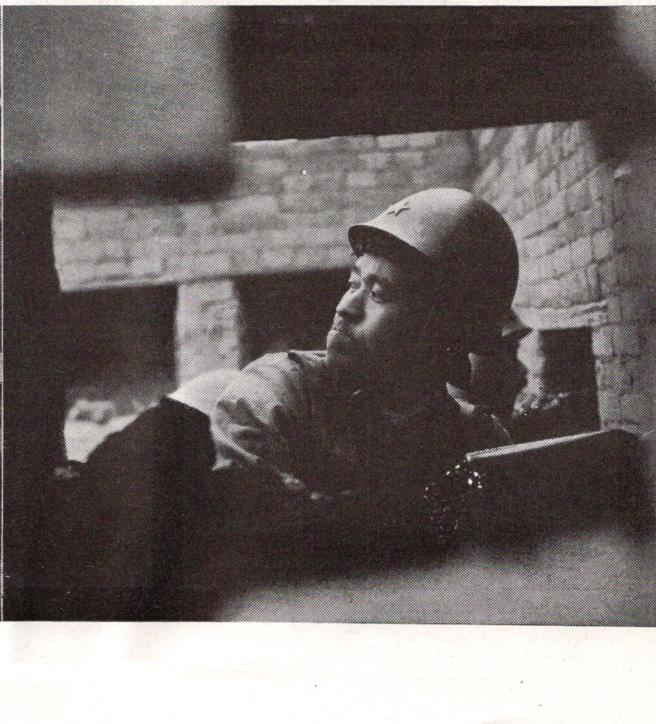
Landing at Yokohama in mid-September, we were met by representatives of the Foreign Office, passed through customs without examination, and a short while later deposited in the lobby of the Imperial Hotel at Tokyo. Coming into the harbor at Yokohama we, as well as the few other foreign passengers, had been severely cautioned that the entire district was in a fortified zone and photographs were forbidden. The bay was full of naval craft of every description, in holiday bunting. As we tied up at the pier several hundred school children, in brightly colored kimonos, gathered to wave to a returning diplomatic mission. The temptation to get out the Contax

(*Continued on page* 105)

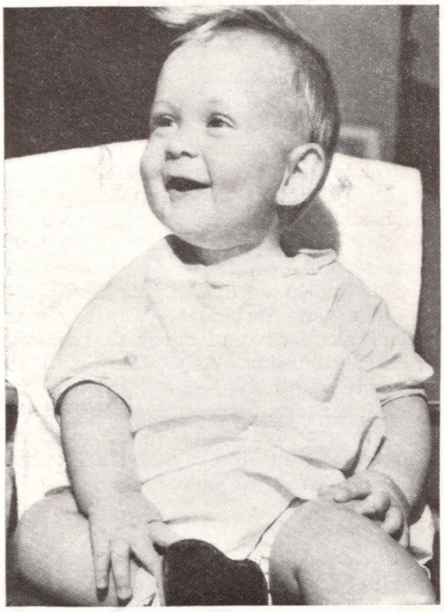
One of the many Nipponese machine-gun nests in action before Hankow.



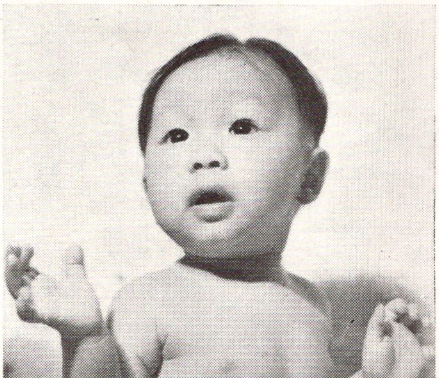
A sniper at the siege of Hankow crouches behind a brick wall.

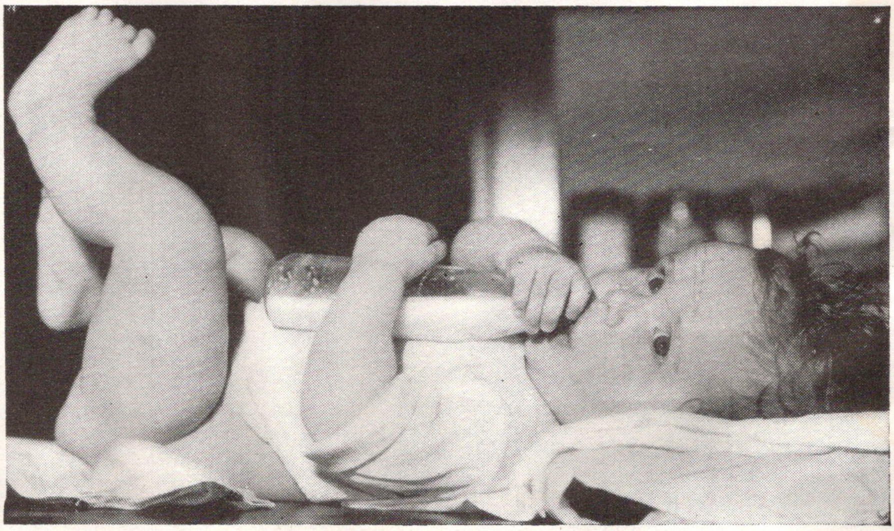


From a Doctor's Album



FOR several years Dr. Catherine Murphy, an obstetrician and pediatrician of Los Angeles, has had a hobby of photographing the babies under her care. A few of the pictures are shown on this page. All were taken in the doctor's office with a 3-A Kodak equipped with a portrait attachment. Exposures were made on Super Sensitive Panchromatic film. When photographing very young children, Dr. Murphy uses flashbulbs for illumination. For children of six months of age or over she uses three or four No. 1 Photofloods. She usually makes bulb exposures with lens stopped down to *f* 22. The walls of her office are crowded with her patients' pictures.



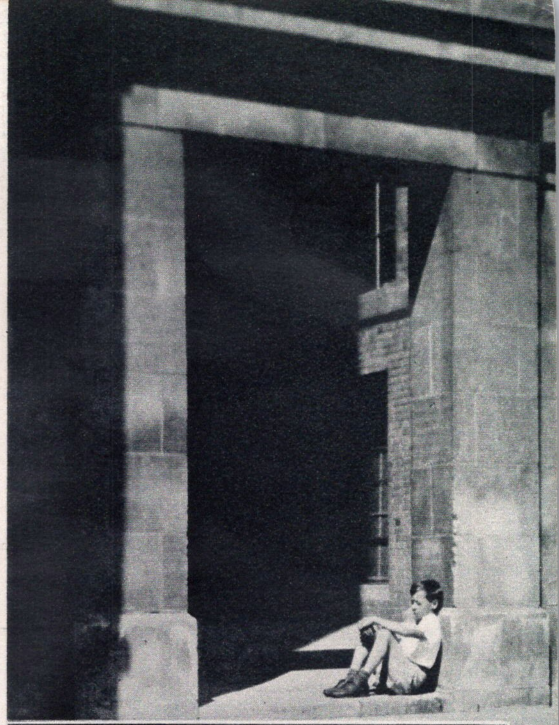


TAKE PICTURES ON PAPER

by ERWIN F. WOOD

Photographs by the author

Paper negatives which give good contact prints and enlargements can be made in your camera by using a fast, single weight bromide paper in place of film.



The photograph, right, is reproduced from an 8x10 enlargement made from a section of the adjoining 5x7 direct paper negative.

FOR those who have never tried it, the making of paper negatives *in the camera* offers a new and thrilling adventure in photography. The process is easy and, what's more, even less costly than taking pictures in the ordinary way on film. Just load your camera with bromide paper such as you would use for making enlargements and you're all set to go.

Here is a simple method of obtaining the textural quality, tone, and print control inherent in the paper negative process. Use single weight, soft grade, bromide paper in your camera as the negative material. "But I don't care to stand around all day exposing the stuff," you say. You don't have to. Modern bromide papers are *fast,* as fast if not faster than many of the plates used by the old timers. The accompanying outdoor illustrations were taken on a bright, sunny day with a 5x7 Graflex camera, 1/5 second exposure at *f* 4.5 on Agfa Brovira Velvet (soft) paper.

The speed of the paper imposes no more limitations than are experienced in using a camera loaded with ordinary color-blind film. Indoor portraits by photoflood illumination are possible with exposures of not more than ½ second. It is wise to experiment a little at first by making two or three exposures, each of different duration. In this way you can make a serviceable exposure guide for use with whatever paper you may select.

A camera using cut film holders is the most practical for this sort of work, though I have loaded roll film spools with strips cut from large sheets of paper. A film size of less than 3¼x4¼ is not feasible inasmuch as the grain or texture of the paper becomes too pronounced in the finished print when enlarged.

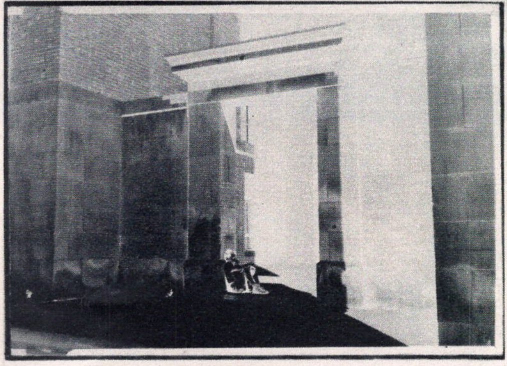
Develop your primary paper negative in a soft-working, non-staining developer. Formula D-72 diluted about six to one works very well. Develop to a maximum, at least 4 minutes at 60° F. It may be necessary to add a little extra bromide in order to keep the negative from muddying up because of prolonged development. Judge it as a negative, with the aid of *transmitted* light, and not as a print.

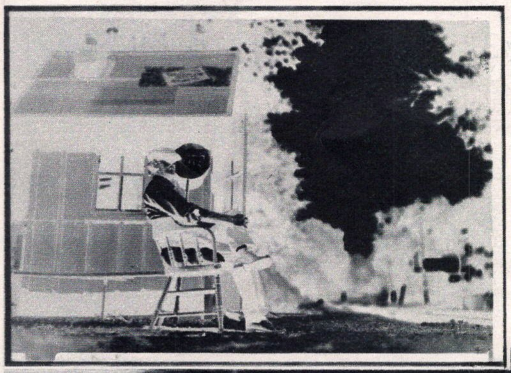
After fixing, washing, drying, and flattening, the paper negative can be retouched on the back with pencil. A trial print is first made and examined carefully. Areas of the negative that print too heavily can be held back by an application of graphite or charcoal rubbed into the paper with a stump or a bit of cotton wrapped around a matchstick. Light printing areas can be made more translucent by rubbing a little oil into the particular spot. Use the oil very sparingly as it affects the light-transmitting property of the paper very markedly. If you find you have used too much and a large area is affected, wash the negative in carbon tetrachloride, xylol, or benzine and start over. The retouching of the paper negative is done by transmitted light. You can rig up a box with a light inside and groundglass on the top. Or if you have a contact printer you will find that it serves equally well as a retouching stand.

In making your enlargements from these paper negatives it may be necessary to substitute a Photoflood for your regular enlarging bulb in order to bring the printing time down to workable limits. Unlike regular celluloid negatives the paper is little affected by the heat of the Photoflood. Do not try to oil the entire negative in an attempt to make it print faster. The paper takes the oil unevenly over large areas and a botchy print results.

The short scale of bromide paper emulsions, as compared with regular negative emulsions, calls for subject material and lighting having the fullest range of contrast. With soft development of both the negative and the final print a pleasing separation of tones is obtained, much like a half-tone cut. Subjects having large masses of graded tones are rendered most effectively from both the tonal and textural standpoint.

Primary paper negatives used with an understanding of both their advantages and limitations will yield prints of definite pictorial merit, very often turning the commonplace subject or scene into a thing of beauty.—



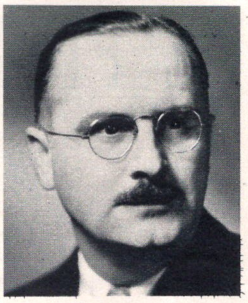


Another enlargement which the author made from a portion of the paper negative shown. Exposures as fast as 1/5 second at *f* 4.5 in sunlight will produce good negatives on a soft grade of single weight bromide paper.

This candid portrait truly portrays one of the moods characteristic of the baby's age.

PICTURES, PICTURES Everywhere!

Are you a snapshooter or a photographer? The author tells you what to do to earn distinction as the latter.



The Author.
Portrait by Sarra

by LEO NEJELSKI

Author of "The Camera Eye—Where to See and How to Take Good Pictures."

THE average person who buys a camera rushes about to photograph his children and his wife. Then he photographs the house from the outside. After arriving at this point he complains about subjects at which to point his camera. Yet this type of person often chooses to call himself a photographer. Actually he can be considered little more than a rank snapshooter.

A snapshooter graduates into a photographer when, using his camera as an instrument, he begins to interpret his subject and to express his ideas or emotions about his subject.

Unlike the snapshooter, the photographer seldom lacks subjects. He is searching constantly for picture possibilities, even when he does not have his camera with him. Driving to and from work, riding on the train or street car, in the woods or in the park, at home or away from home, everywhere he goes he makes actual or mental notes of ideas, objects, scenes, and people that might be photographed at a later time.

There is the alternate method of sling-

The unobserved cameraman can get many good pictures such as this one.

Ordinary subjects often make unusually fine photographs.

ing camera and equipment over the shoulder and then stalking down picture possibilities. While this method does not appeal to me, I know several good photographers who get many fine negatives in this manner. Time can be saved if this type of picture hunt is confined to one area or one idea, instead of jumping about haphazardly. It is far more productive, for example, to confine one day of picture making to the beach, another to the circus, and still another to the factories along the tracks instead of crowding them all into one outing.

There is another approach to picture possibilities, an approach that holds much in store for the future. That is the taking of pictures around a central idea or thesis. By this plan, pictures are used as symbols, much as words are symbols, to express the author's reactions and interpretations.

I have never been to China. I do not understand the Chinese because I am not intimately familiar with what they want out of life, how they exist, what their attitude is toward the rest of the world. I can read about the various phases of their lives and gain some knowledge. However, if I had a great number of pictures selected to clarify the various phases one at a time, I would get a clearer idea of those aspects where I had nothing occidental to compare them with.

The same reasoning applies to all subjects on which the reader lacks visual experience. It is not necessary to go far from home to find a subject for a series of pictures. Every one of our states has an individual character that distinguishes it. It is possible for a person to spend an entire lifetime photographing the individuality of one state. What are the geographic characteristics of the state? Who are the people inhabiting it? Is it progressing or is its importance in the nation decreasing? Why? How do the people live? Where do they work? How do they amuse themselves? Who provides the cultural leadership? The religious leadership?

One can go on for a long time asking questions about a section of the United States that can be answered more clearly for present and future generations by means of pictures. Not every person will have the same approach to the problem. However, it is advisable to have a knowledge of the territory to be photographed. This can be garnered from books in the local library. With this information at hand, an outline could be made of the subjects that will be explored and the order in which they will be photographed. Attempting to photograph the entire subject on one trip will lead inevitably to disappointment and confusion. Concentration on one phase of the subject, on the other hand, leads to concentration of ideas and interest.

Lacking interest in a broader area, it is possible to build an interesting and revealing sequence of pictures without leaving one's "home town." Here, again, it is advisable to begin by asking a great number of questions, putting them down on paper, and then selecting the subjects that can be illuminated most clearly by

(*Continued on page* 95)

The country dweller is surrounded by an unlimited wealth of fine picture material.

The equally fortunate city resident can find a picture wherever he points his camera.

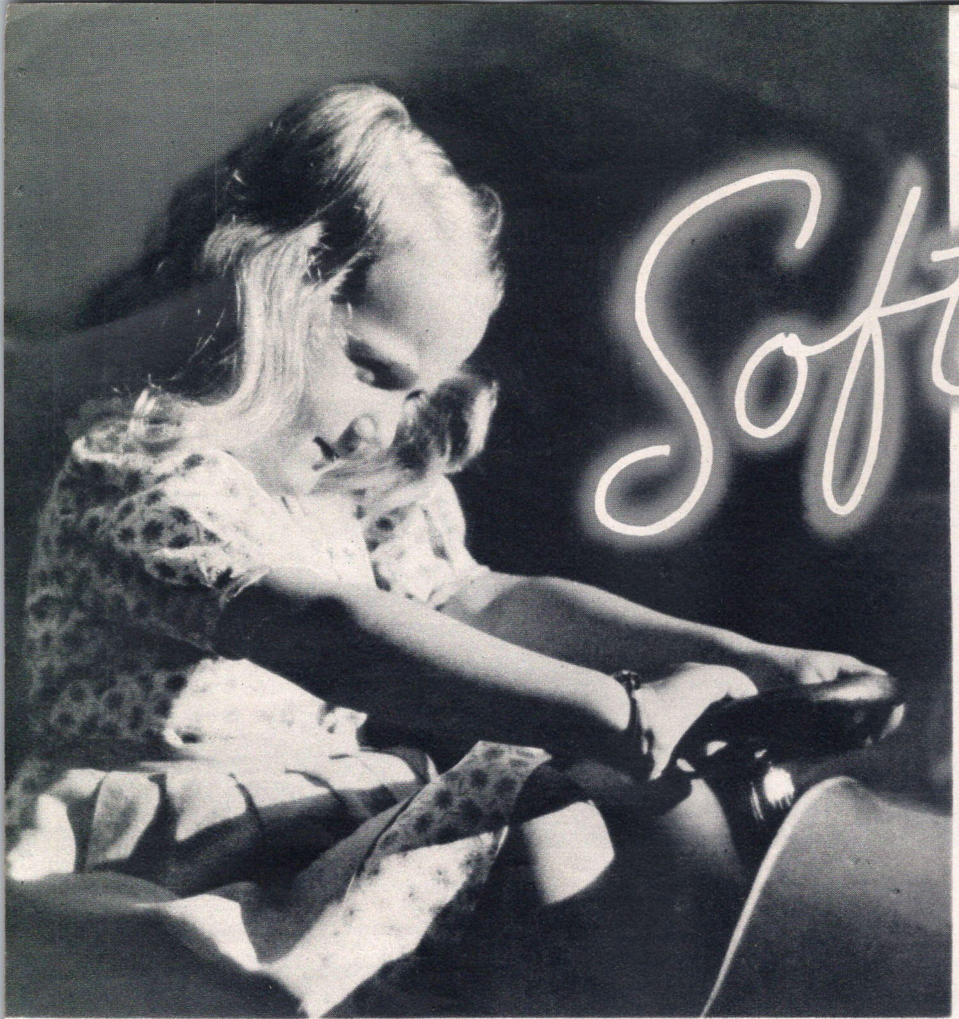
ERIA
ITALIANA
LION
SPAGHETTI
HOUSE
DRUGS
SODA

Soft Focus FOR PICTORIAL QUALITY

By

ROBERT DESMÉ, A.R.P.S.

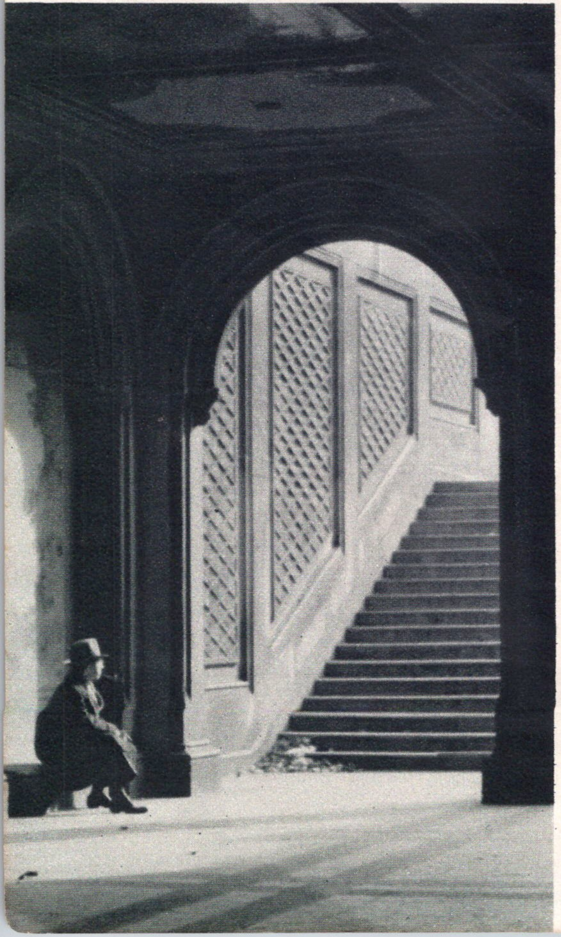
Photographs by the Author



This picture was taken with a soft-focus lens. Note that while there has been no loss of detail the highlights are not too crisp and the contrast is pleasingly soft.

This technique gives a picture with full detail preserved, harshness removed, and contrast subdued. Don't confuse "soft focus" with "out of focus."

In making this shot the author placed over his anastigmat lens an auxiliary lens of the Distar type fitted with a black paper sieve as described in the text.



NO fair-minded pictorialist will deny that soft focus has its place in the art of photography. It is true that the famous but elusive "*f* 64 group" is supposed to object to soft focusing, though just on what grounds I don't know. I must even confess that I have never met a member of this group in the flesh, though the spirit is often present in beginners.

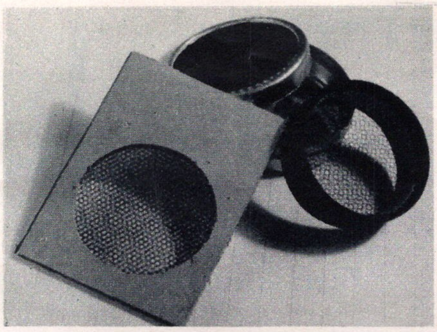
Many camera owners, especially beginners, object to soft focusing without at all knowing what it is. Others enthusiastically but ignorantly strive to achieve soft focus effects by racking out of focus their carefully-built anastigmat, with pictorially disastrous results.

If we are going to be real purists, we should try to represent nature as the eye sees it, and certainly not even the keenest human eye sees as sharply as an anastigmat lens. It is a generally accepted fact that the eye is an imperfect instrument with all sorts of aberrations, and, conversely, that the anastigmat is too sharp and "draws hard" from an artistic point of view. In the case of pictures made with it, whatever is not in exact focus becomes unpleasantly fuzzy, and very far from pictorially pleasing.

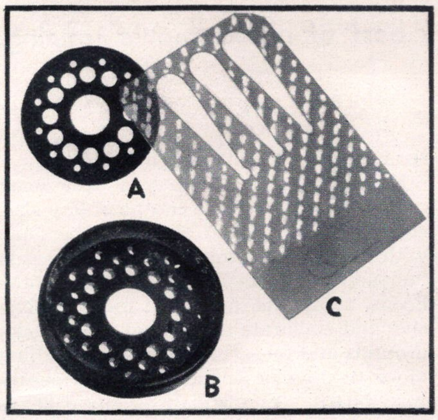
To overcome this condition, soft focusing was resorted to some decades ago. It quickly became a fad, was abused, and then a reaction set in which led most of us to scorn anything not absolutely sharp. The miniature camera, because of its special requirements, made matters a little worse. As a result, one can occasionally see in salons some photographs in which objects in every plane—foreground, middle distance, and distance—are so sharp that the picture actually hurts the eye, although one may wonder at the perfect technique which makes such *tour de force* possible.

All this is certainly bad from an artistic point of view, and soft focusing, moderately but adequately used, is very desirable. It is particularly pleasing with pictures of children, women, and some landscapes. Soft focus can also render sunshine beautifully and cause sunlit objects to gleam and glitter in a surprising way.

Let us not confuse *soft focus* with *out of focus* as beginners usually do. In an out-of-focus picture, detail is completely lost; the image of a point becomes an evenly lighted circle and a white thread is changed into a flat ribbon. On the contrary, in a good soft focus picture detail is fully preserved, but subdued. Highlights are surrounded by a halo which removes harshness, diminishes contrast, and



Simple devices which slip over the camera lens to give soft focus effects can be made from black tulle and cardboard.



Other soft-focus devices include a black paper sieve (A) fitted in auxiliary lens (B), and Misonne Soft-Sharp screen (C). They are described fully in this article.

makes the picture look natural and therefore more pleasing. When the effect is used with restraint it takes a keen observer and experienced artist to see and appreciate the difference between this and a picture made in the ordinary way.

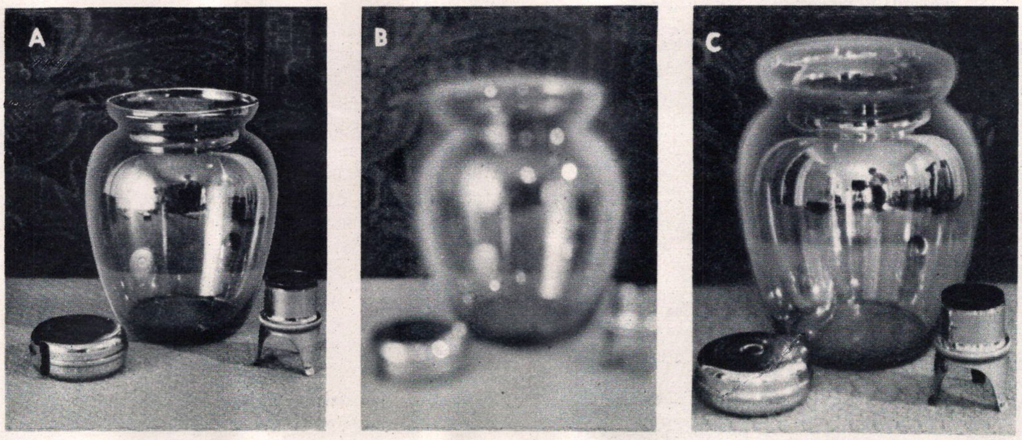
Soft focus effects can be obtained in enlarging by various means, such as putting a piece of groundglass in contact with the paper, by moving a piece of clear glass or cellophane about halfway between the enlarger lens and the paper, or by capping the lens with a diffusion disc of some sort. These methods give different effects and can be used during part or all of the exposure, the soft focus effect being at a maximum when the device is used during the whole exposure.

When used while enlarging a miniature negative, any soft focus device kills the grain, that terror of the miniature fan. But soft focusing during enlarging should be employed with the greatest restraint. The effect of any of the gadgets mentioned is to slightly change the path of the rays of light, and it is the rays of light which cause the sensitized paper to become black when developed. It follows that the blacks will be made to creep into the highlights and if the effect is at all pronounced it is noticeably unpleasant. The highlights become muddy and dirty and the print looks as if the paper had been fogged.

(Continued on page 76)

Photograph made with an anastigmat lens over which was placed a Distar slip-on lens fitted with paper sieve shown above, then printed through a Mortensen Texture Matrix.

Picture A, below, was taken with an anastigmat lens in sharp focus. The next, B, was made with the same lens out of focus. Compare it with C, made with a soft-focus lens.



LET'S MAKE A STILL

Here is an interesting field where picture possibilities are unlimited and one which affords the very best of photographic training.

This high-key still life, made by the author with a 4x5 plate back camera, was selected to appear in U. S. Camera 1939 by Edward Steichen, sole judge.

HOW many times have you asked yourself this question: "Where can I find some new material for salon photography?"

Perhaps the elements have conspired together to give all landscape a wan and dispirited look, and Uncle Ben (who makes a wonderful character study) has testily refused to "have all them damn bright lights in my eyes."

The answer to the above question and a remedy for "photographic doldrums" is found in the title of this article. The solution of the problems involved in making a still life affords the very best of photographic training. The amateur can work carefully and unhurriedly, oblivious to weather, time, and the vagaries of human models. His subjects will not move about in an exasperating way, and his lights are responsive to the slightest touch. Still life photographs are acceptable in all salons and contests, and a good one never fails to click with juries.

For this type of picture you will need very little extra photographic equipment, and subject matter can easily be found about the house. Kitchen utensils, foods, vegetables, fruits, flowers, vases, brassware, books, tools, and musical instruments offer intriguing photographic possibilities. Almost any camera can be used. The ideal instrument for still life work is a view camera not smaller than 3¼x4¼, but excellent work can be done with any camera of any size. The lighting studies of the cube accompanying this article were made with a miniature camera. All other photographs were made with a 4x5 view camera. You will need a rigid tripod with tilting head, and of course your other equipment: exposure meter, portrait attachment, etc.

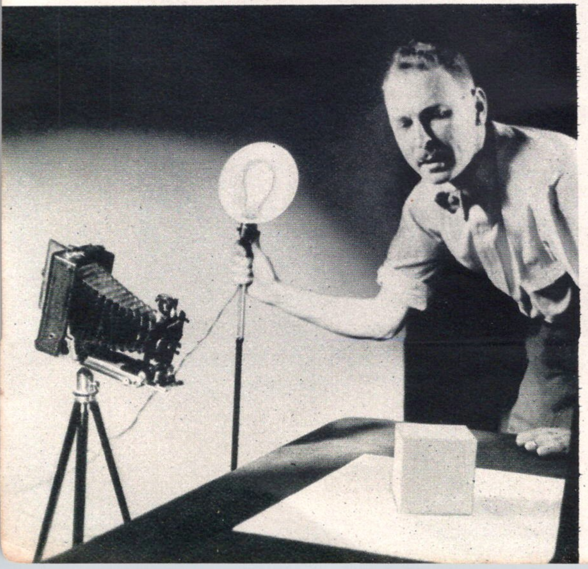
For lighting still life you will need only two lights. These can be of any size, style or price. Good work can be done with ordinary household 100-watt mazda lamps in reflectors, or you can use Photofloods, spotlights, and even more expensive and elaborate equipment. For backgrounds and foregrounds there is nothing more flexible or economical than show-card board. You will need three 28x44 inch sheets, black, white, and neutral grey. To introduce texture into the picture you can use table cloths, towels, rugs, etc. A few lengths of cheap cloth (monk's cloth, rayon prints, etc.) added to the above will provide endless combinations.

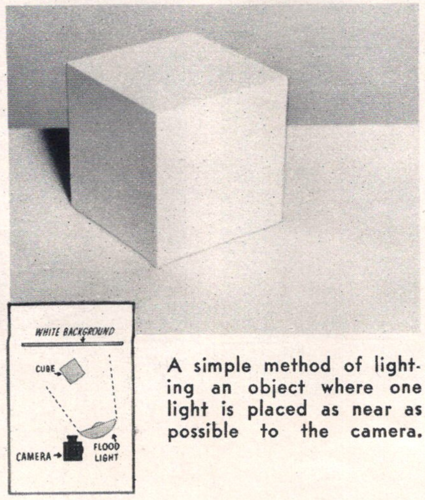
These are three simple steps in making a still life photograph.

1. Setting Up. In selecting your subject matter, *do not use too many units*. Crowding is artistically bad and complicates every succeeding step. Be simple, honest, and direct. When planning a still life try to be original but not bizarre. You should have an interesting variety of mass, line, and texture. Do not use all round shapes nor all angular ones. It is generally good to have one thing dominate the composition. Give it emphasis by careful lighting or placement.

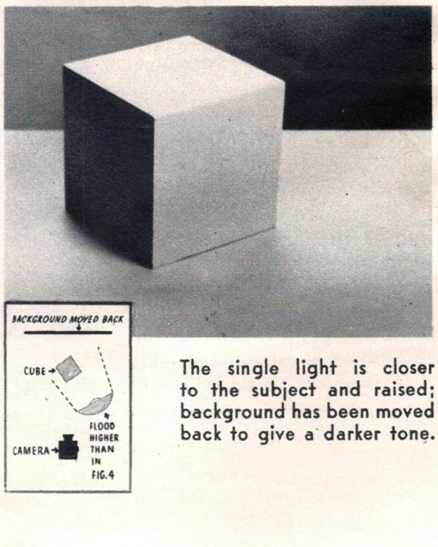
2. Lighting. After you have arranged your objects to form an interesting composition the next step is lighting them. Here again be simple and leave the over-dramatic, criss-cross shadows and startling highlights to the commercial pho-

Ordinary amateur equipment is adequate for making good still-life photographs.





A simple method of lighting an object where one light is placed as near as possible to the camera.



The single light is closer to the subject and raised; background has been moved back to give a darker tone.

LIFE

By
WILLIAM
LANGDON
Photographs by the author

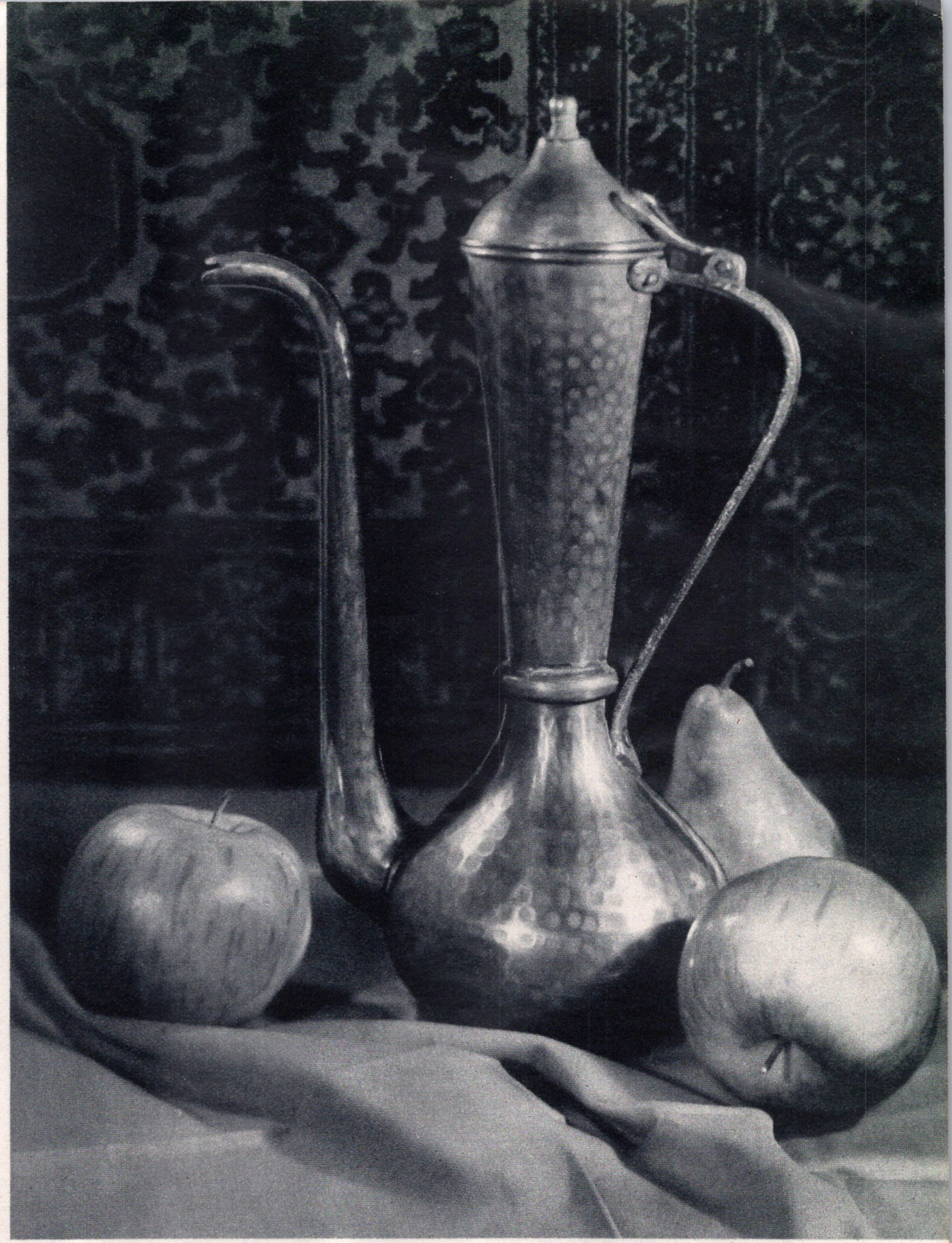
tographers. The use of only two lights helps to keep your lighting from becoming involved. Start with *one* light, the main light, and move it about the setup until the shadows form the best composition. The play of highlight and shadow can best be observed by viewing them through a piece of green celluloid or glass. This eliminates the confusing color of the objects and gives a monochromatic rendering exactly as the negative will pick it up.

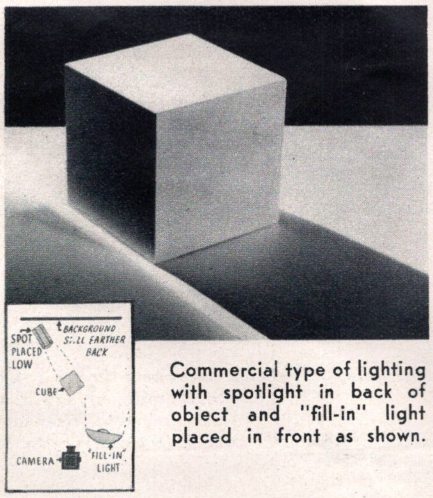
When you have placed the main light to your satisfaction use light No. 2 to lighten the shadows. This is called the "fill-in" light. Do not destroy the shadows with this light, merely lighten them enough to bring out the modeling. This will keep the tonal scale within the range of the negative, which is very short compared to the human eye. The picture directly below illustrates this point.

3. Exposing and Developing. Focus carefully on a point about one-third back into the picture, and stop the lens down as far as possible. If the camera is not too close this will bring the entire picture plane into focus. When sharpness is not desired throughout you can use a larger stop. Next estimate and make the exposure.

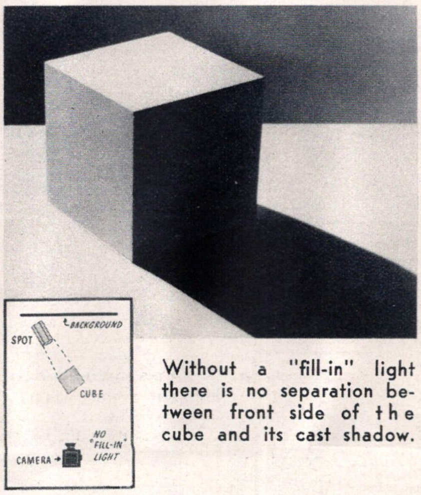
Whenever possible develop the negative immediately, leaving the setup intact. Inspection of the negative will reveal errors in exposure or composition and a new, correct negative can be made. If this is not possible, make *three* shots. First make a shot using the estimated exposure, then make a second giving double the time. Make a third, halving the estimated exposure. One of the three should be "on the head." Use your ordinary developing procedure. Try and get a negative with crisp quality and some detail in both highlights and shadows in order to insure a good print.

Study still life pictures made by others, and keep a file on the subject. Work patiently and carefully and try and find out the "where and why" of the results you achieve. You will be rewarded with some fine pictures for possible salon use and will show improvement in your entire photographic endeavor.—

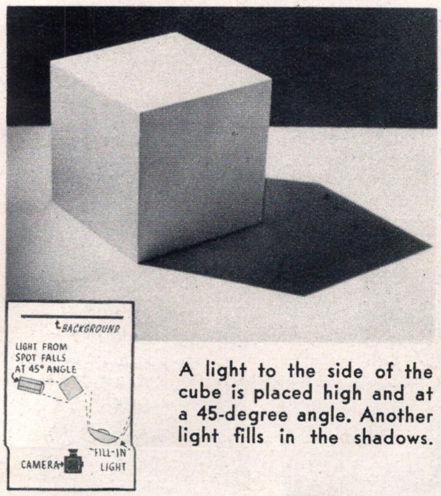

Another fine still life made with amateur equipment. This one is done in low key.



Commercial type of lighting with spotlight in back of object and "fill-in" light placed in front as shown.



Without a "fill-in" light there is no separation between front side of the cube and its cast shadow.



A light to the side of the cube is placed high and at a 45-degree angle. Another light fills in the shadows.

Learn Darkroom Technique

The studios' still labs find that cleanliness and order are essential in the production of their high-quality photographs.

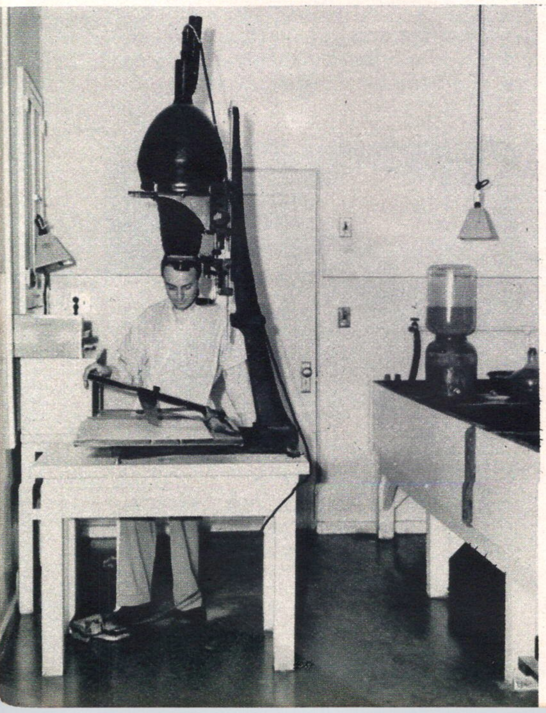
As the world's largest user of still photography, Hollywood's motion picture industry is a source of many valuable pointers for the amateur photographer.

The total daily output of prints and negatives by the major studios runs into the thousands. Negative sizes vary from the tiny 24x24 mm "thumbnail" to the large 8x10 portrait artist's "glamour" head. Prints range from contact size to 16x20 enlargements. The studios make bigger prints occasionally but the 16x20 "full-page" photo is a regular part of the routine of servicing the country's newspapers and magazines. A print this large is no longer a novelty and even miniature negatives are blown up to that size without trepidation.

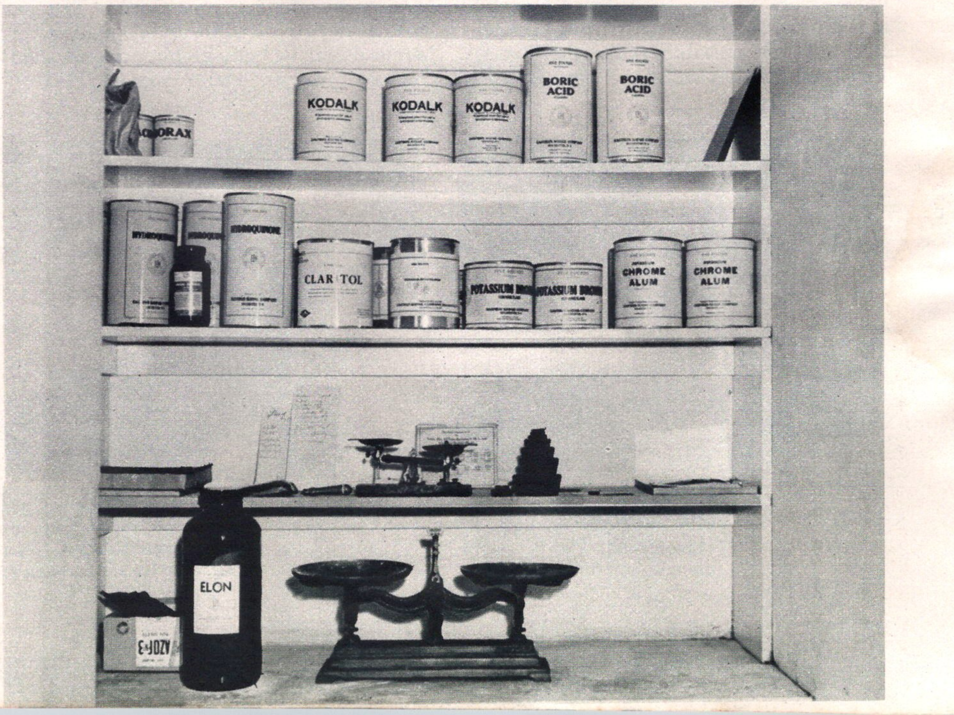
Hollywood, photography's biggest customer, also takes its place as a source of high-standard photographs and photographic methods. Amateurs with commercial aspirations or with the simpler desire for better results in their own work can benefit greatly from Hollywood's example. The high-standard photographs are achieved by high-standard procedure. In every case the darkroom technique follows prescribed rules. And Hollywood's photographers—George Hur-

Publicity shots like this one of Bette Davis by Hurrell must be carefully processed.

This enlarging room is arranged for maximum convenience to insure efficiency.



The darkroom chemical closet is kept in perfect order and the work table cleaned after every "mix." Formulas are written out and always in sight to prevent serious mistakes.



rell, Clarence Bull, Elmer Fryer, Tom Evans, Laszlo Willinger, Scotty Welbourne, Buddy Longworth, Bill Walling, Muky Munkacsi (Martin Munkacsi's younger brother) and a dozen others—are recognized as the foremost practitioners of their art in the world's most picture-conscious community. In its function as a *precise* processer Hollywood can be of most use to the amateur.

The consensus of Hollywood's best opinion is that cleanliness—just plain c-l-e-a-n-l-i-n-e-s-s—is the photographer's greatest aid to success. Air-conditioning systems, rooms made dust-free by machinery, water and plenty of it, common caution and plenty of that, too, all combine to create the cleanliness that produces dust-free negatives and clean prints. The amateur who works in a small darkroom (or even in the bathroom) can apply Hollywood's reverence for cleanliness in his own smaller way.

Each man in a studio's still department is responsible for the equipment he uses. It's a part of his job. And woe to the man who doesn't clean his tanks, trays and floor before leaving for the day. Spots and finger marks on negatives are grounds for dismissal. A scratch is a heinous crime. Because Hollywood insists on such treatment of its most valuable assets—the people and sets photographed—cleanliness has become so usual that it occasions comment only from strangers who walk into a studio laboratory for the first time to be surprised by its immaculateness and order.

This cleanliness is as zealously matched in efficiency—another vital phase of picture making that shows only indirectly

(*Continued on page 99*)

Print perfection is evident in this glamorous study of Margaret Lindsay by Hurrell.

From Hollywood

By
ALEX
EVELOVE

Although thousands of prints for publicity purposes are made each week, the cleanliness standard is not permitted to lapse at any time in this orderly contact printing room.

Still man Muky Munkacsi (right) goes to work with four cameras and an assistant.

DEPARTMENT
OF
PORTRAITURE

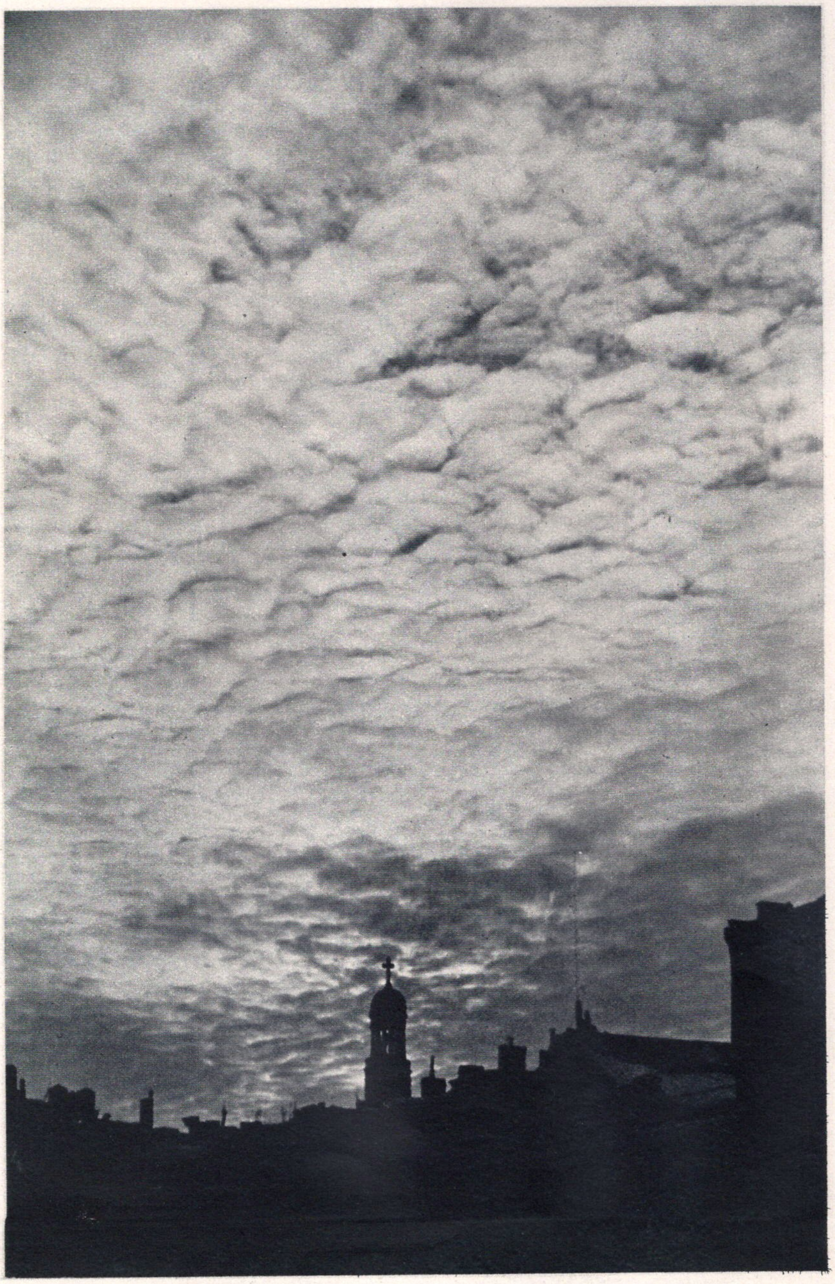
PICTURE ANALYSIS

by NICHOLAS HÁZ, F. R. P. S.
Teacher and Lecturer, New York City

CAN one find beauty in the midst of squalor? Is it possible to capture a fleeting mood of dignified splendor and translate it into the tonal values of a photographic print? It is! The quality of success is in direct proportion to the imagination of the photographer. The hand that clicks the shutter must be guided by a mind that is quick in selective visualization.

You would not think, looking at this picture, that it was taken in the most ugly part of New York's Greenwich Village. It has the glamour which one associates with some romantic part of the Old World. It is hard to believe that a part of the city crowded with billboards, telegraph poles, and the Sixth Avenue El, could yield a lovely picture. Skies, however, strike their notes of beauty no matter what lies beneath. But, it would not have been a complete picture with the sky alone. It is by the superb combination of sublimated city structure and cloud masses that we arrive at a composition in this exceptionally fine print.

CHURCH OF POMPEI by Helene Sanders, F.R.P.S.



This picture is the work of Helene Sanders, F.R.P.S. That she is ranked as one of our leading pictorial photographers is her just due. Such a photographer as Helene Sanders would find the lyric or romantic aspect of any subject matter, if it is to be found at all. Let us say that she is confronted with the problem of making a beautiful picture out of a conglomeration of rusty nails, worm-eaten wood, and a pile of sand. She would concentrate her interest on the sand, for that is the most flexible ingredient. She would probably arrange some sort of sand pattern. She would compose the rhythm, pattern, and texture on the groundglass in such a manner as to either hide the wood and nails or subdue them into secondary positions. Then, she would select a time when the sunlight would transform the subject into a definite mood. The picture would suggest a broader plane than the subject matter could ever imply.

That is what she has done with this picture—*The Church of Pompei.* The steeple of the church is a beautiful bit of architecture. Her alert mind grasped this bit of beauty and made it the center of interest in the picture. The ugly details of elevated structure, signs, and muddled buildings have been subdued by dark tones. The silhouetted outline of buildings suggests the moving rhythm of a busy neighborhood. They have not, however, been allowed to intrude their raucous details upon the dignified simplicity of church and sky.

After one has decided upon the subject matter, the next thing would be to establish a center of interest. One must pick the most emphatic image knowingly, even before the exposure is made. The next thing to decide is whether or not there is unity, clarity, and good rhythm in the picture. The tone values and proper color corrections are more or less automatically taken care of by the kind of film one uses, the filter he employs, and the correct timing of the picture.

Once the exposure is made and the above mentioned things are well done, one can continue the elimination of the unnecessary images or the modification of those included in it. The most brilliant photographers do all this by the use of light and chemicals. They usually abstain from manual intrusion into the picture. But if they must retouch, they do it in a way that they cannot be caught with it.

Mrs. Sanders likes to take pictures in which no retouching is to be done. But, if there is a flag pole or a sign board or an elevated track to be removed, she is not afraid of the job. It would take a very sharp eye, for instance, to find the traces of the flag pole which used to be a part of this picture.

Of the many points of view from which a picture may be analyzed, let us take rhythm and tone in this instance. Mrs. Sanders was very lucky to catch the clouds when they were rhythmically accelerating toward the steeple, in which they culminate. This speeding up, with the climax in the cross of the tower, gives a spiritual and an almost religious con-

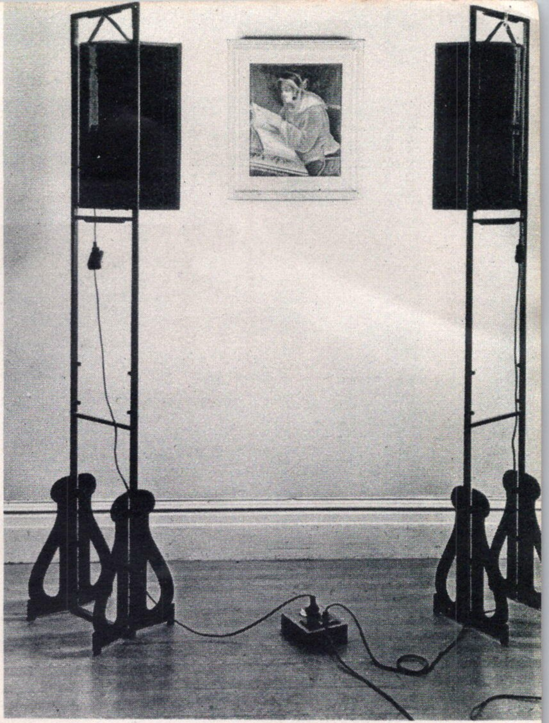
(*Continued on page 90*)

PHOTOGRAPH YOUR VALUABLES

by STAN JENKINS

President, Utica Camera Club, Utica, N. Y.

Protect yourself in case of fire, theft, or loss with a picture record of your personal possessions which have intrinsic or sentimental value.



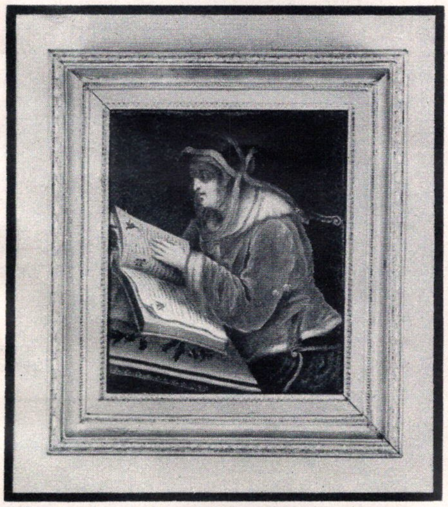
Suggested setup for photographing objects such as paintings, valuable papers, etc.

CLEAR photographs of personal valuables are in themselves only second in value to the articles they portray. They are valuable not only for record and sentimental purposes but in case of fire, theft, breakage, or loss. Prints are also useful to illustrate letters when describing purchases, gifts, acquisitions, awards, collections, or possessions.

Many articles with a sentimental value far beyond their intrinsic worth make good picture subjects, especially if the photographs of them are taken when they are new and before age or use have dulled their full beauty. Pictures of personal or family valuables will often be treasured by children for a lifetime, and no great artistic ability is needed to make these record or "catalog" illustrations as they are sometimes called.

You can make photographs of personal or family possessions incorporating all the quality of salon entries. You may have seen the photograph of the plate and two bowls which won so many salon prizes in spite of the fact that the objects were plain, undecorated dishes set on white oilcloth against a background of white blotting paper. Therefore you can apply the full range of your photographic ability, artistic or otherwise, in shooting any subject suggested by the illustrations herewith.

The picture at the top of this page illustrates one method of lighting a painting and shows the Hi-Lo Switch, Utility Racks, and Lantern Type Flood Lights described in Popular Photography in the issues of February, May, and June, 1938, respectively. The illustration below shows the copy made with above arrangement in which four 200-watt mazdas, two on each side, were used on an old painting having a lot of color and a lot of glare. Pan film, without filter, separated the colors and the lights were placed at an angle of 45 degrees to eliminate reflections.



Copy of an oil painting made on pan film with the lighting arrangement shown above.

The photographs on the following two pages show a variety of subjects suggesting the many possibilities for interesting and valuable pictures of objects to be found in your home. Each type of subject is treated according to its nature which more or less governs the arrangement, background, illumination, and camera position most appropriate. Small objects such as jewelry and medals usually show up better on a dark background with a light at each side and the camera directly above. You will find it easier and more convenient in taking such subjects to set both the camera and the subject at an angle of 45 degrees. This will produce the same result, of course, as placing the camera directly over a subject on the table or floor.

A packing case serves as a base for the jewelry, but a board or similar support may be used. I don't know of any particular use for a picture of a cocktail set unless it might be to inclose a print with an invitation to a party! However it's chromium and that's something to shoot at. Each glass in No. 3 is a different tint and each rests in an ornamental holder which is clearly shown because of the white back. The effect of straight lines on the chromium seen in No. 4 is obtainable only by experiment, and the necessary arrangement of lights and white reflectors varies with the subject, shape, or design. One problem is to keep yourself, your camera, and your lights out of the picture.

The model plane suggests several stunts. For instance it has every appearance of being a full size plane in actual flight except for one thing—the propeller is dead. This propeller can be quite easily made to appear in action by using the same technic as employed in making the animated cartoons. Have your camera fixed immovably and stop the diaphragm to give an exposure of at least five seconds. If you want to show the propeller in ten different positions, divide the total exposure into ten separate exposures of ½ second each. Take the first ½ second exposure then move the propeller slightly forward and take the second ½ exposure. Repeat this procedure until you have made ten exposures—or any number you wish—and the propeller will appear to be turning and the plane to be traveling at high speed.

Texture in any material—metal, wood, or cloth—is easily rendered. Again I repeat that in practically all photography it is purely a matter of LIGHT! Just recall the appearance of a rough road at night illuminated by your car lights. Then when you want to render texture just place your light low in the position that gives the desired shadows. This applies especially to etching or engraving. The light should be at right angles to the engraving. You can see this clearly in the illustration of the miniature and two medals. The shadow on each side of the miniature shows the position of the two lights used to bring out the engraved lettering on the medals.

I have shown a wide variety of subjects to stimulate the imagination and to suggest the many possibilities for taking photographs which will be valuable to you in many ways. Not the least part of this value is practice and experience. Photographing such subjects will give you, in my opinion, the best possible practice in your photographic technic. You have the same things to consider as in practically all photography, indoors and out, summer or winter—the arrangement of the material, the background, the elimination of unessentials, the *illumination,* the point of view or camera position, exposure, developing and printing. All of these elements enter into the job.

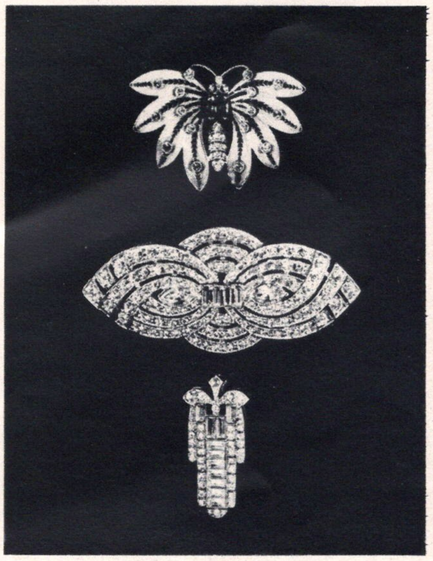
The results are likely to give you much greater satisfaction than a good snapshot of a pretty scene.—

PHOTOGRAPH YOUR VALUABLES

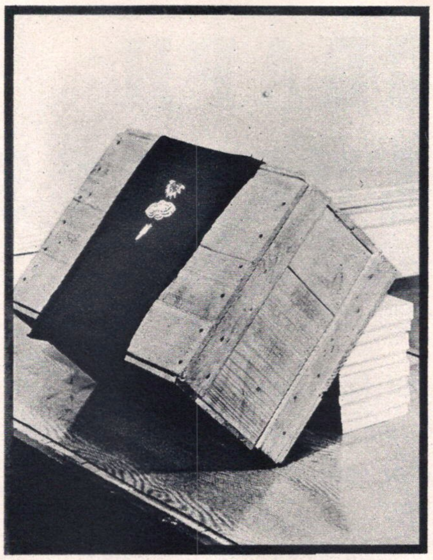
Illustrations by

STAN JENKINS

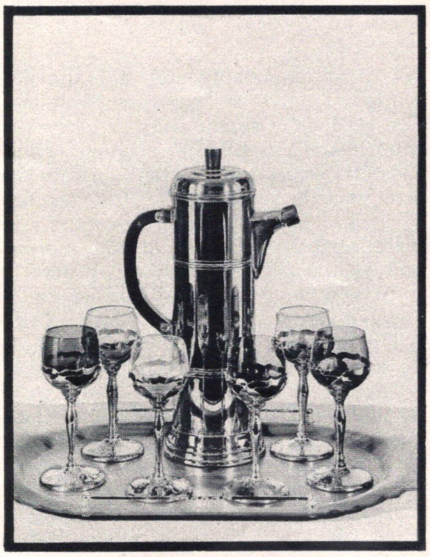
These pictures show a variety of personal belongings which may be photographed for reasons given by the author on the preceding page.



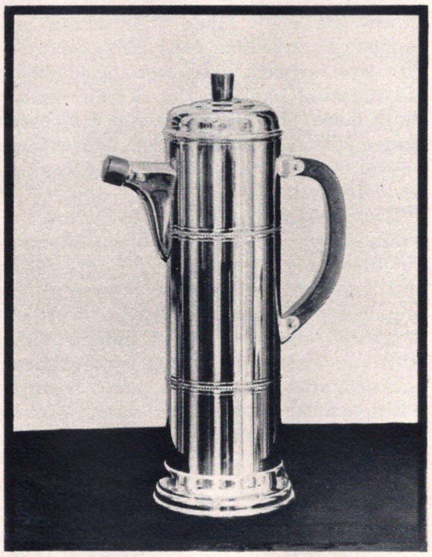
It is easy to photograph jewelry. Use at least two lights, one on either side, to eliminate all shadows and obtain sparkle.



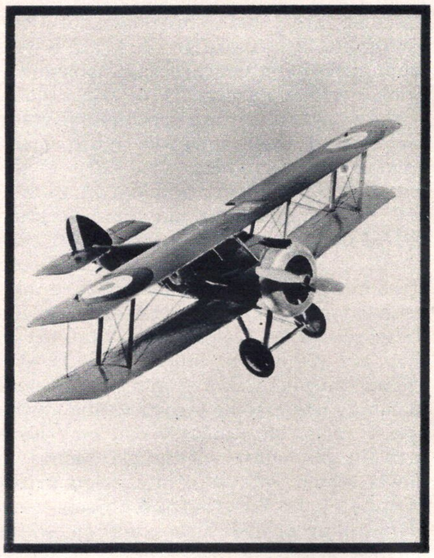
This kind of a setup can be used for small objects. A piece of black material makes a suitable background for jewelry.



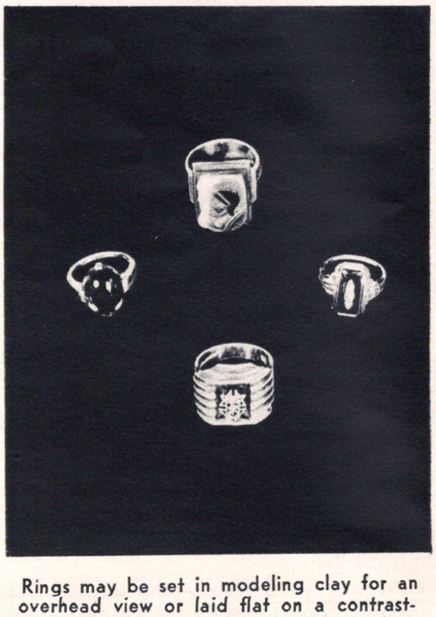
Chromium plate and silverware make sparkling pictures. In lighting the subject reflections must be carefully controlled.



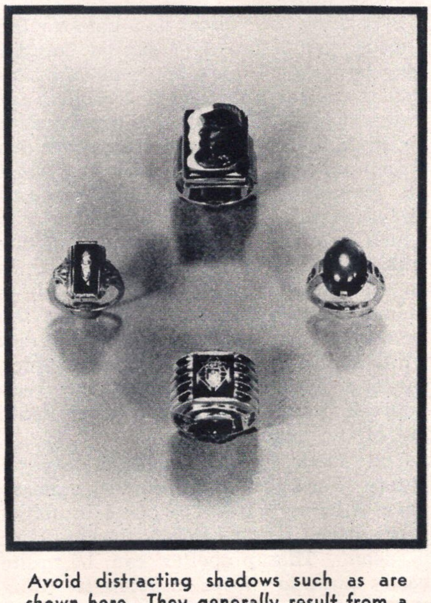
This effect was secured by careful lighting. White cardboard was placed near the object to obtain pleasing reflections.



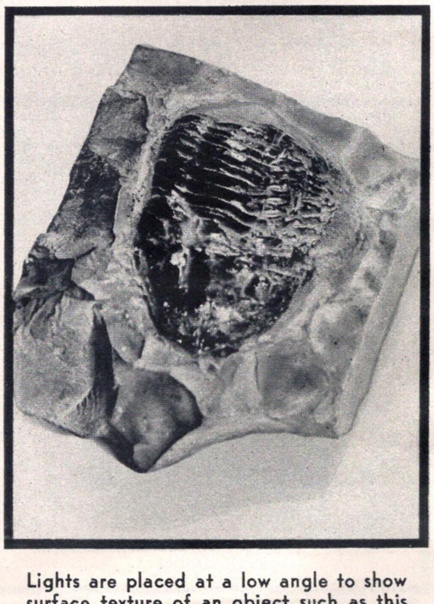
Model rests on a plate glass supported by two boxes. White material placed on floor beneath glass is lighted separately.



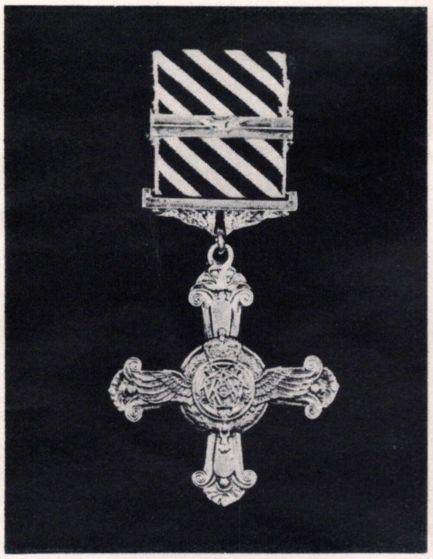
Rings may be set in modeling clay for an overhead view or laid flat on a contrasting background for a 45-degree angle shot.



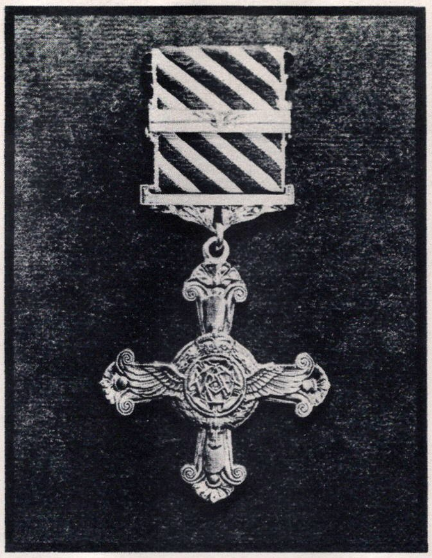
Avoid distracting shadows such as are shown here. They generally result from a lack of care in lighting the subject.



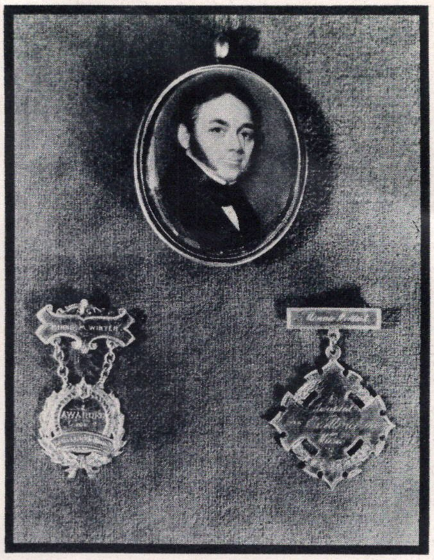
Lights are placed at a low angle to show surface texture of an object such as this fossil, a specimen from a collection.



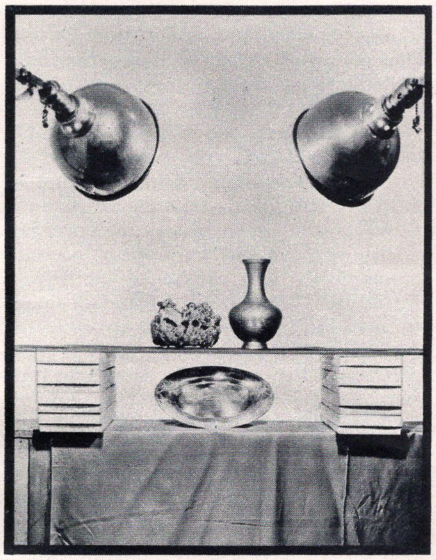
Rendition of texture is obtained with two side lights placed at a low angle, and a black background used for contrast.



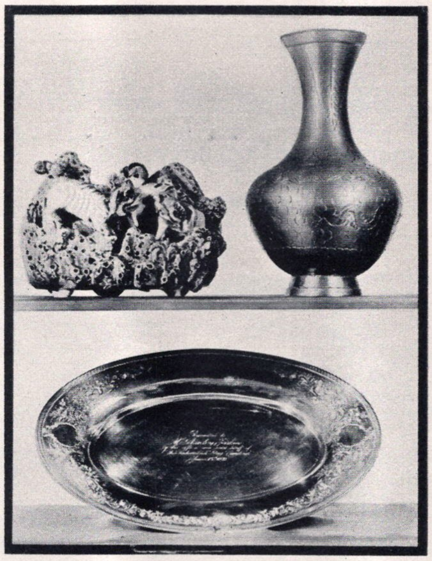
A single top light gives good detail on cross but renders the bar and ribbon too bright. A plush background is used here.



Another example of texture lighting. Note how the engraving is made legible by placing lights at right angles to it.

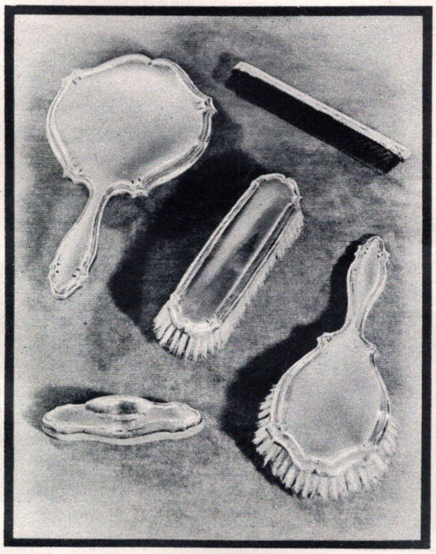


Here's a way to set up several small objects. A piece of plate glass supported by two stacks of boxes serves as a shelf.

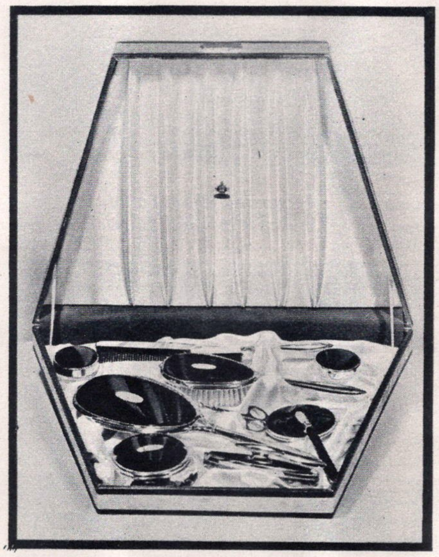


The use of the glass shelf permits the photographing of several items on one negative where film economy is desired.

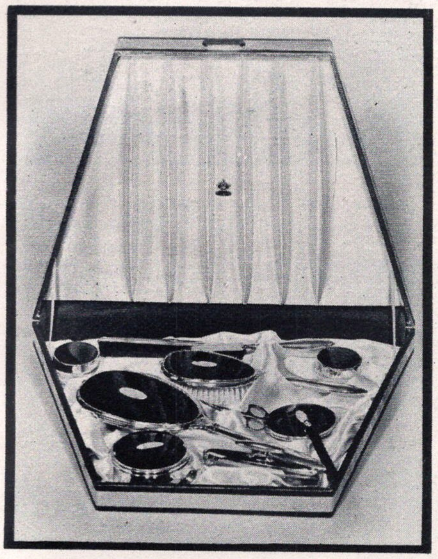
A petrified toad and draped wallpaper background. Similar rare objects make very unique and interesting photographs.



Arrangement of silver articles. Objectionable reflections must be guarded against in photographing flat metals.



Here the lights are placed too far to each side, causing unpleasant shadows around the inside edge of the box cover.



By moving lights nearer the camera and slightly lower, shadows are eliminated and satin folds rendered more clearly.

FOCUS ON Mexico

Popocatepetl, 17,800 ft. high, dominates the landscape southeast of Mexico City.

by **BOB HURST**

Traveler, Author, and Photographer, Chicago, Ill.

South of the Rio Grande are patios and palaces, modern cities and ancient ruins, magnificent scenery and picturesque peoples—a festive fare for your camera.

THE Indian dreams of his Happy Hunting Ground. The bearded Arab has visions of a pleasant Moslem heaven where fountains splash and bright-eyed maidens beckon. Each man to his fancy but the luckiest one in the lot is the American camera fan. For at our southern boundary lies Mexico, a paradise on earth for photographers.

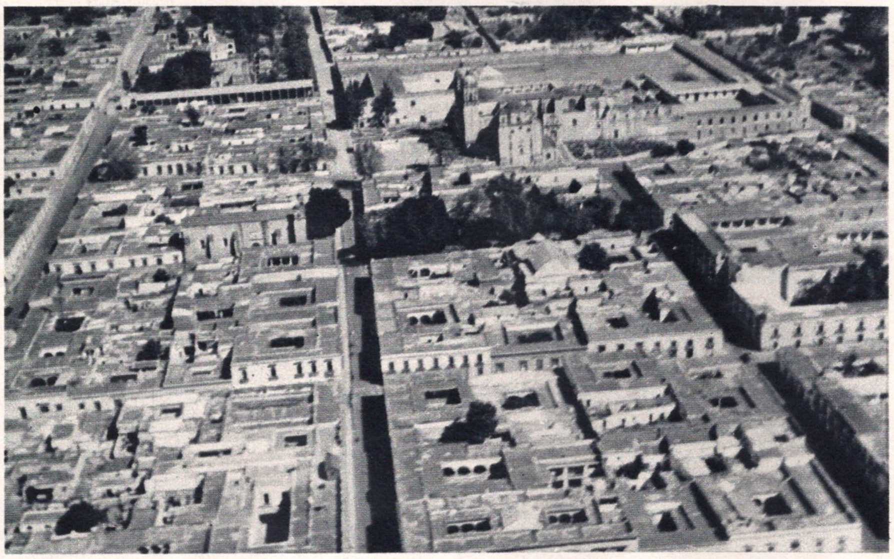
Golden sunshine is practically never-ending. Scenery is as gorgeous as it is varied. From snow-capped peaks to lush, tropical valleys, is often but a rifle shot. And what is, perhaps, the most interesting is the vast, ceaseless, parade of native types. Even the dirtiest Mexican child in the raggedest *sarapi* has a certain charm which you cannot fail to capture on a negative. The people, unspoiled, and with that instinctive dignity of primitive man, make the finest subjects imaginable.

At this point, while you are throwing your toothbrush and a few rolls of film into a bag, I'll tell you how to reach this wonderful country. You can just go right on with your packing—I don't mind—and you'll be surprised to learn how easily you can get to Mexico and how economically you can make the trip.

Taking Chicago as a fairly central point in the country for our start, we find that there is a train every day for Mexico City. The journey, In American Pullmans all the way, takes about 67 hours. On Sunday there is an express called the *City of Mexico* that makes the same trip in 53 hours. The round trip fare on either train is $90.30 plus $34.88 for the Pullman.

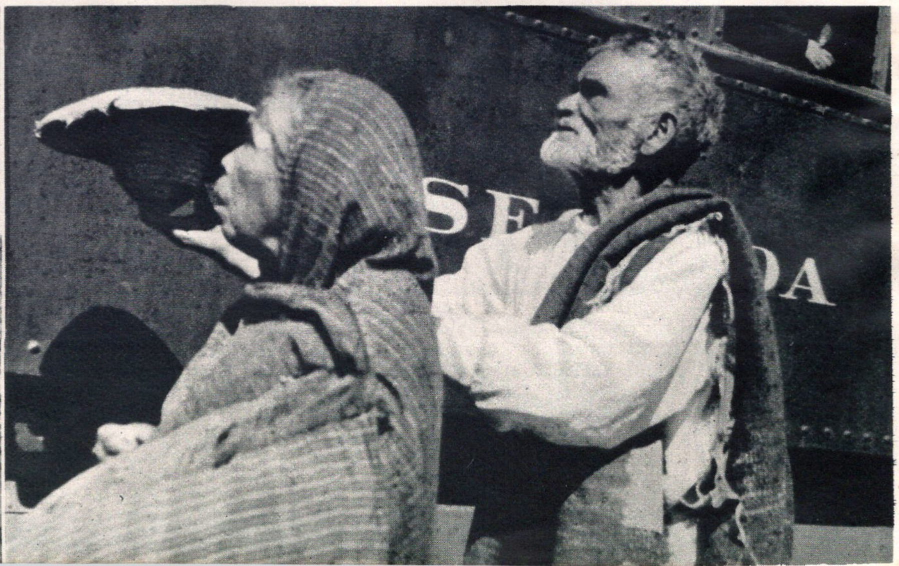
If you are in more of a hurry, and expense is of secondary importance, Mexico City is only 15½ hours from Chicago by air. The plane leaves in the evening so it is not much more than an overnight hop. The round trip fare is $210.32.

For the traveler who likes to include a sea voyage in his vacation there is a fine combination trip via rail to New Orleans, then a three day sail across the Gulf of Mexico to Vera Cruz and rail, again, overnight to Mexico City. The



Above: The air passenger gets this view of Oaxaca. Note the patios indicated by openings in the roofs.

Lower left: The author's train puffing hard on a grade climbing out of the valley of Morélia. Below: The poor seek alms as the train stops at a way station.



The bull ring is a "natural" for color shots. Be sure that you sit on the shady side of the arena.

round trip rate including meals and berth on the ship is $145.55 plus $14.20 for a Pullman on the Chicago-New Orleans jump. There is also a steamer service out of New York direct to Vera Cruz but inasmuch as we have selected Chicago as our starting point, let's stay on the services from the Windy City.

The motorist driving to Mexico may look forward to a comfortable and fascinating trip. About 2500 miles of fine road lead him to the southern capitol from Chicago and he will find almost as splendid facilities for man and machine south of the Rio Grande as he will in this country. For the amateur photographer, this approach to the country is perhaps the most interesting as all sorts of country is traversed. From the hot jungles around Victoria, he climbs to the bracing 7500-foot high Valley of Mexico amidst a constantly changing topography.

Before leaving the country, if you are taking any apparatus not made in the United States, it must be registered with the U. S. Customs Service so you may bring it back without paying duty. Find out at your local Post Office where the closest official Port of Entry is located. It will furnish you with Customs Form No. 4455 which you fill out in duplicate, listing any imported photographic equipment you intend taking with you. One copy of this form is filed with the Customs Department and the other is retained by you as identification for your imported camera and accessories. It is taken up and attached to your Customs Declaration when you re-enter the country. If your equipment is entirely American-made, this procedure is unnecessary, of course.

In former years, Mexican law required that all movie film be processed, inspected, and, if necessary, censored, before leaving the country. This ruling is no longer in effect and the tourist may bring back his exposed reels and color shots for processing here. Still pictures are no longer censored either, and rolls may be developed in Mexico City in any of the fine camera shops or you may

(*Continued on page* 91)

Above: The cathedral in Mexico City is an architectural triumph and the largest church in North America. Right: Photogenic flower-girls meet the train in Oaxaca.

Lake Patzcuaro offers some of Mexico's most beautiful and picturesque scenery.

Below: Mitla, built by the ancient Zapotecs, was hundreds of years old when Cortez came to Mexico.

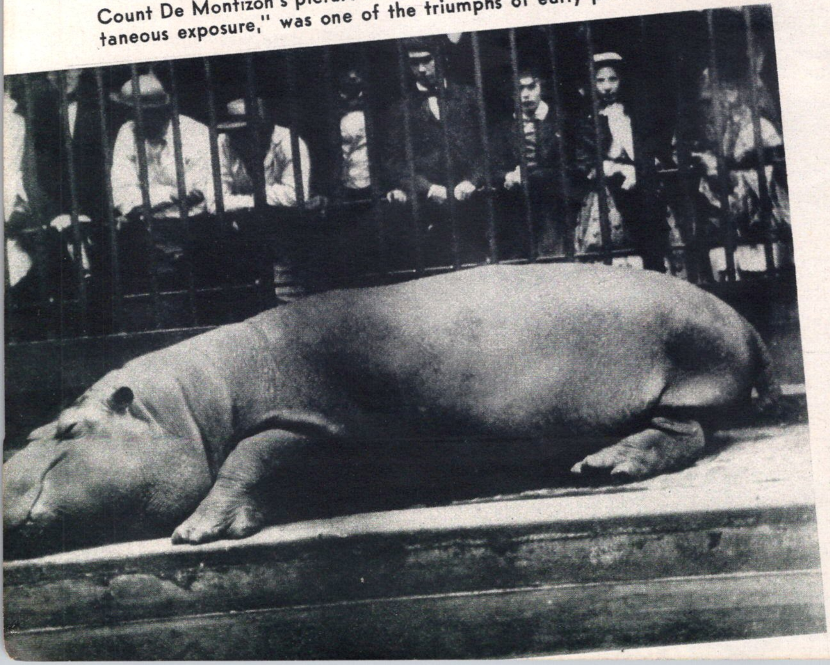
"Youth and Age," taken in "fine weather," in August, 1855 by Fallon Horne, on collodion. An exposure of 20 seconds was necessary to record the image.

WORLD'S *First* CAMERA CLUB

The Photographic Club of London was the first camera club ever organized. It consisted of forty amateur photographers, most of them men distinguished in other walks of life. Shown here are five prints exhibited in their annual salon in 1855. It is interesting to note, in our flashbulb and superspeed emulsion age, that an exposure of not more than 20 seconds was required to obtain a picture of good definition, provided the day was sunny and clear.

Top: "Fortune Telling," photographed by O. G. Rejlander in 1855 on collodion. The exposure was 11 seconds. Above: Philip H. Delamotte obtained this photograph, "Innocence," with a 20 sec. exposure.

Count De Montizon's picture of this hippopotamus, made with an "instantaneous exposure," was one of the triumphs of early photographic days.



"The Miniature," photographed by Lake Price, was taken on collodion in June, 1855. The exposure time was 10 seconds.

Pleasing silhouette and cloud effect photographed with the aid of a homemade filter.

MAKE YOUR OWN FILTERS

by LOUIS ELL

Photographs by the author

Inexpensive gelatin film light filters can be easily mounted between glass for protection and longer service.

THERE is no good reason why any amateur should shoot his pictures without using a filter wherever one will improve the shot. Photographic filters suitable for either still or cine work, and of a quality comparable with custom-made ones, can be assembled easily by the average amateur photographer. Many times this is desirable, either because of economical reasons or because some special combination or color with which the amateur wishes to experiment is available only in the gelatin film form.

A 1½" square gelatin film filter costs 25 cents, and larger sizes are available at slightly higher prices. An ounce of Canada balsam, enough for 15 to 20 filters, costs 75 cents, and a box of 2" square cover glasses about the same. Lantern slide cover glass can be used if it is free from distortion-producing flaws, and it can be cut in circular form or left square as desired. If it is cut round, the circles should be of the same size as the camera lens. These few essential materials are available from any camera supply house on application. Xylol is used to clean excess balsam off finished filters, and can be obtained from the same source. Other necessary items will be found in any household.

Here is the procedure to follow in assembling a filter: Clean the cover glasses with soap and hot water, rinse them thoroughly, and dry them with a soft, lintless cloth. Polish them with lens tissue and stack them in a clean, dust-proof box until needed. After the glasses are once polished, handle them only by the edges so that an unnoticed fingerprint will not ruin the efficiency of an otherwise perfect filter.

Cut the gelatin film filter to the size desired by leaving it between the folds of tissue in which it is wrapped, cutting both tissue and filter with a pair of sharp shears. *Do not at any time touch the film with the bare fingers.* Always handle it with a pair of tweezers by its extreme edges. The gelatin film, in this state, is very delicate.

Materials needed to make a filter are gelatin film, balsam, and cover glasses.

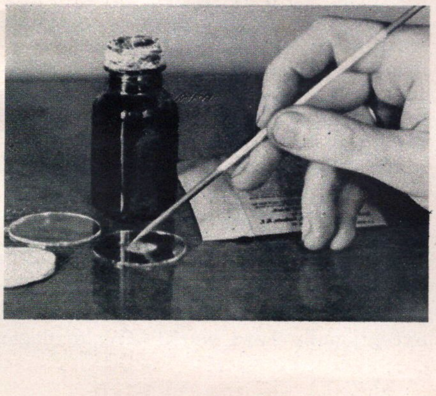
WRATTEN GELATINE FILM LIGHT FILTER
8
1½" Sq.
K2
6
KEEP IN A COOL, DRY PLACE.
EASTMAN KODAK CO., Rochester, N.Y.

Set the bottle of Canada Balsam in a pan of hot water to thin it. Keep the water hot, so that the balsam will remain easily workable. If it is still too thick when warm, thin it by adding a little alcohol, stirring well with a clean glass rod. Ready for use, it should have about the consistency of thin syrup.

Lay one of the cover glasses on a sheet of clean paper and remove any lint from its surface with a piece of tissue. The glass must be spotlessly clean. With the glass rod, deposit a small pool of the thin balsam in the center of the glass. Pick up the filter film with the tweezers, and lay it over the pool of balsam. Cover the forefinger with a piece of clean tissue or white cloth, and with a rolling motion, press upon the top of the filter, spreading the balsam evenly over the glass beneath. The film will want to move about under this treatment, but with care you can hold it in the proper place. Be sure to work out all air bubbles. If these are allowed to remain, they tend to produce distortion in pictures taken through the unit. Of course, the excess balsam will squeeze out from under the filter and run out on the paper, but that is as it should be. Simply be careful that any which gets on the cloth or tissue over the finger is not allowed to touch the exposed face of the film, as it will certainly stick, de-

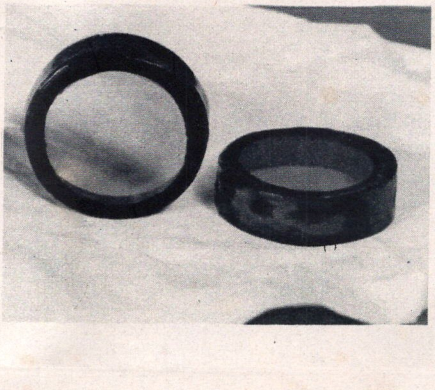
(*Continued on page* 88)

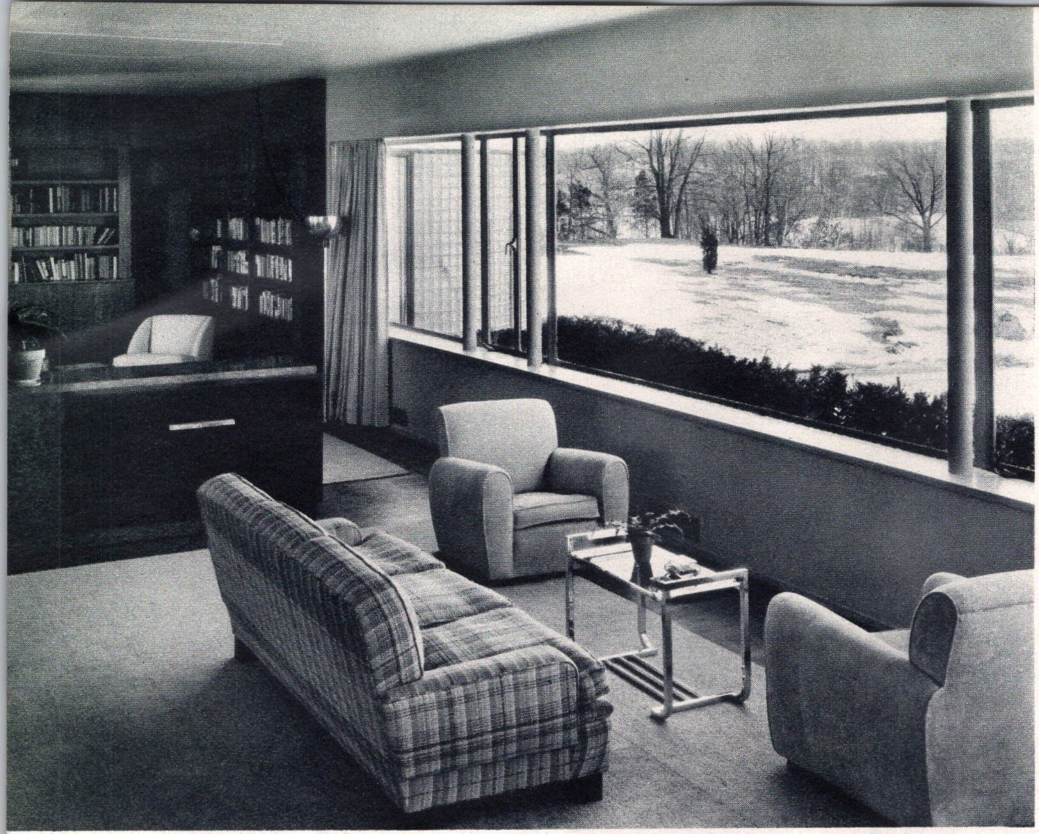
Balsam is applied to one of the cover glasses as first step in the assembly.



Balsam is distributed between the filter and cover glasses by pressure of finger.

The assembled filter, when thoroughly dry, is mounted in a celluloid holder.





The exterior was overexposed and then corrected by local control in the printing.

Emelie Danielson CHOSE A CAMERA CAREER

by DORA ALBERT

In an exclusive interview, this now famous photographic illustrator describes the technique she uses to produce striking pictures.

THE tall, friendly man seated behind the mahogany desk looked down at the young woman whose hair cascaded around her forehead in little curls and whose eyes were shining.

"So," he said, almost incredulously, "you want to leave your job as my secretary? You want to go to New York and study photography? I'll hate to lose you —you know that. But have you considered what this step means from your point of view? Jobs at $35 a week don't grow on every tree, you know. What do you think you're going to make as a photographer?"

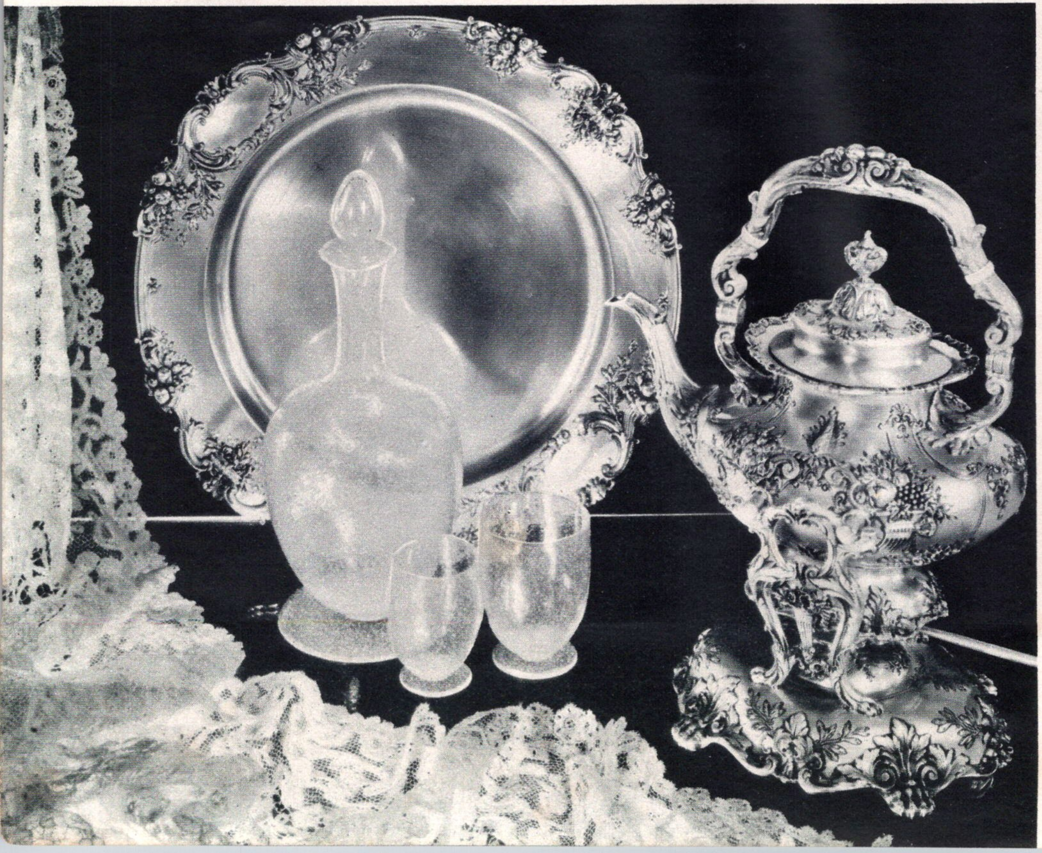
This portrait of successful Emelie Danielson was made by T. A. Lundbergh.

A tiny furrow wrinkled Emelie Danielson's brow. Then she smiled.

"I never gave that any thought at all," she admitted. "But I suppose if I make less than I have as a stenographer, I can always go back to stenography."

Of course, it is obvious to all those who are familiar with Emelie Danielson's work in photographing interiors for magazines, decorators, and private individuals that the amount of money she has earned in photography has made her salary as a stenographer seem very picayune. Yet she says, "The money you make in photography is never quick, easy money. If any man or woman seeks a field in which one can get rich easily, the last field in the world that I would recommend is photography. It requires patience, strong health, endurance, and exceptionally hard work. The manager

In order to make silver photograph realistically, Emelie Danielson putties it first.



of one of the leading schools of photography tells me that she receives a great many letters from women all over the world saying that they want to take up photography because it is such easy, ladylike work. They are dead wrong."

It was an article on photography as a career in a woman's magazine that first gave her the idea of going into the field. The article described the qualifications for a photographer, and she realized that she had all those qualifications. Inborn in her was the feeling of the true artist for composition; she could sense what was right and wrong with a photograph.

But she knew she needed more specific knowledge than that to make a success of a career as a photographer, so for a year she studied in New York. She became interested in portrait photography to such an extent that when she opened her own studio she specialized in portraiture, photographing still life in her spare time.

"I took pictures all day long," she told me. "When I didn't have any orders, I practiced photographing all kinds of things, never stopping from nine in the morning till five at night."

In 1930 Miss Danielson learned that there was to be a fair in Sweden, and at once it occurred to her that here was an excellent opportunity for a photographer. She went to a number of magazines, including *Harper's Bazaar, Town and Country,* and *Home and Field* (now *House Beautiful)* and asked them if they would be interested in photographs of exhibits at the fair. These photographs were so successful that she gave up portraiture and began to specialize in photographs of buildings and interiors.

Since then she has made two more trips to Europe, photographing houses and castles in France, Italy, Germany, Austria and England; and today her work appears in all the leading magazines devoted to beautiful homes. She has photographed the homes of such celebrities as Helen Hayes, Katharine Cornell, Edna Ferber, Gladys Swarthout, Lily Pons and Dorothy Shaver, the department store executive.

When I asked Miss Danielson her advice to photographers, she said, "Never make up your mind beforehand as to the type of photography in which you wish to specialize. Try everything until you hit on the field you like best. By a natural process of elimination you will find your own metier.

"In taking photographs of interiors, don't attempt to photograph them exactly as they are. Even an apartment which seems perfect from the point of view of an interior decorator may seem all wrong when you try to photograph it from a particular angle. I always look in the groundglass to see exactly what I will get; then I move the furniture around until I find the effect I want.

"Lights should also be tried out in different places till you get what you want on the groundglass.

"There were interesting lighting problems involved in photographing the library with the view showing the winter scene and in photographing the room lit by the three candles. Since the candles did not give enough light to show up all the details of the room, it was necessary to use additional lighting from the inside, but to use it in such a way that it would be impossible to detect the fact that additional artificial light had been used. To do this, I used a very flat light.

"In the library scene, in order to show up the dark woodwork, I had to overexpose the exterior view, and this long exposure had to be corrected in the printing.

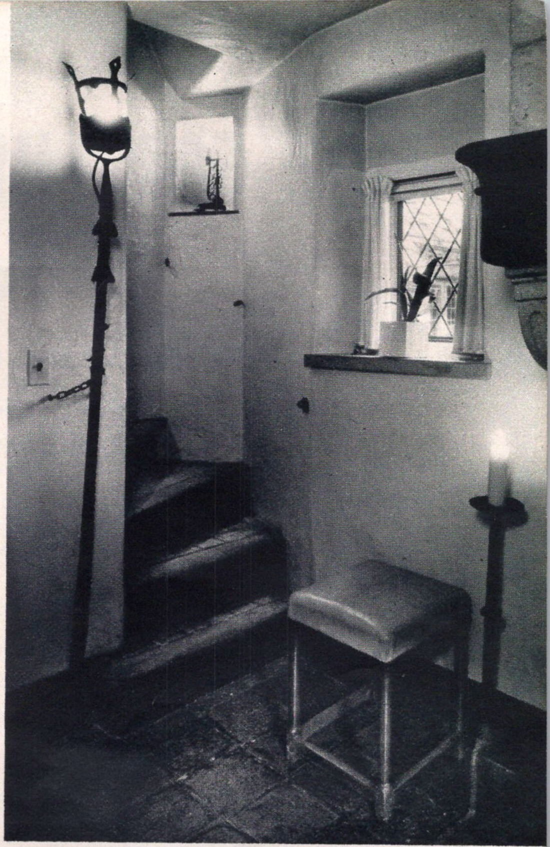
"When photographing a room with mirrors, you have to keep the lights out of the mirrors and keep them from reflecting ugly shadows on the wall.

"Where people are shown sitting or standing in a room, your problems are increased, for in photographing an interior without people in it you can stop your lens down and get a sharp focus with any amount of exposure. But people can't possibly maintain the same position for very long. Consequently, when people are shown, you must give your picture a shorter exposure and open your lens more, probably throwing some things out of focus. To correct this, use more light whenever you can.

"Macy's department store once asked me to shoot a picture of one of their rooms from a low angle. I did, and in addition I took a picture from eye level, with diffused indirect lighting. They liked this picture from eye level very much, and asked why I couldn't use the same type of lighting where a young woman was shown in the room.

"They were literally asking the impossible, for this photograph had required an exposure of forty seconds. You can't use an exposure like that with a young woman in the room, for she would be certain to move long before the forty seconds were over."

If you could see the amount of time and thought Miss Danielson devotes to every detail of a photograph, you would understand why she is outstanding in her field.



Clever lighting supplements the candlelight here, though it is undetectable.

Photographing silver may seem like a simple problem, but actually it is much more difficult than it seems. Turning to a magazine, Miss Danielson showed me what I would call an awful example: a photograph of silver in which the silver looked almost black.

"The person who took that photograph," explained Miss Danielson, "must have lighted the silver directly, which is a mistake. Light on silver makes a high-

(*Continued on page 74*)

This unusual study was made to illustrate an article in which the author wished to concentrate attention upon smooth lines. The glasses stand on an illuminated groundglass.

TIPS FOR THE FREE-LANCE

by CHAPMAN TURNER

Picture Editor, The Kansas City Times

Here's some sound advice from a buyer of news pictures that will help free-lance photographers to understand better the picture requirements of a daily newspaper.

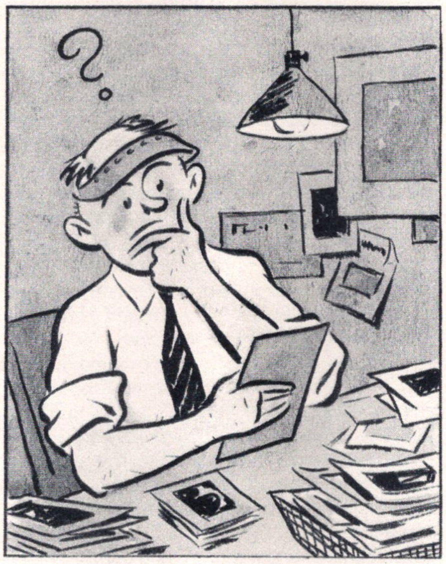
THE camera epidemic increases. And so does the flood of free-lance photographs across the desk of every picture editor in the country.

To the man at the picture desk it seems, at times, that every fellow within a 200-mile range who possesses even a dollar box camera is trying his hand at free-lance photography. The greater number of these pictures are simple snapshots of very mediocre quality and with little or no news value. Some, however, are remarkably good. Within the last year the quality of submitted pictures going across our flooded desk has noticeably increased—possibly because serious free-lance photographers are also consistent readers of photographic magazines and are learning HOW to make their stuff good and HOW to make it saleable.

But 99 per cent of the amateurs who send pictures to metropolitan newspapers in the hope of making some extra money (which goes right back into some super-special camera gadget) have a lot to learn about newspaper picture requirements.

First thing the amateur should do is study religiously the newspaper to which he expects to contribute. Watch the pictures published. Analyze the style and policy of the publication. That is the *first* step. Don't expect to make a fortune from your free-lance contributions to newspapers. You are competing with the big picture syndicates and staff cameramen, and that is very stiff competition. The free-lance who runs across two or three good news pictures a week is a very lucky man indeed. A large city, of course, affords unusual opportunities—but large cities are exceedingly well "covered" by all types of cameramen, and the free-lance who has not already established a reputation is facing a tough situation.

Aside from the news sense that enables a photographer to judge what will and what will NOT make a good news picture, and the ability to turn out a print of good quality, there are a thousand and one other minor details that may mean success or failure to the free-lance.



There's that little detail of getting the picture to the picture editor. If the photographer lives outside the city, that's an important item. Many times photographs cross this editor's desk that are one or two hours too late to make the edition deadline. As a general rule, the next day the news in the pictures is old and consequently they go back to the sender unused. *A special delivery stamp helps* matters, but even special delivery is sometimes too slow. A parcel in the hands of a train porter or a bus driver will get your picture in and get it there quickly. Consider your job only half finished when you have made the print.

Then there is another little detail of caption material that accompanies the picture. Many a photographer takes his picture, then submits it with the hope that the editor will be a mind-reader. A caption covering every detail that has to do with the picture should accompany the photograph when it is dispatched. It doesn't make any difference how long the caption is. The editor will rewrite it anyway, cutting out what he considers unessential. But put *everything* in it that you know about the picture and keep it accurate! Some particular angle may appeal to the picture editor and sell your picture. Anyway, he will feel kindly toward the free-lance who is careful about his captions.

If you want your pictures returned, include a self-addressed return envelope. The picture editor who is working to meet four or five edition deadlines does not have the time to package each set of rejected material. It may get lost or hit the waste basket if the contributor has not taken the trouble to put in a return envelope. It is an excellent idea to put your name and address on the back of *each* print submitted to provide a means of identification should one picture become shuffled with 200 others on the picture desk.

Provide prints of good technical quality. Different newspapers like different types of prints, but as a general rule prints should have good contrast and a good range of middle tones. Don't take *good* contrast to mean *excessive* contrast. A print that has nothing but pure blacks and pure whites is as bad as one that is excessively flat with no deep shadows or highlights. Remember that a 65-line halftone engraving loses much that is in the original print. If the print is bad, it probably will be much worse when engraved. The growingly picture-conscious public is insisting on pictures of good quality—and every picture editor who knows his business is insisting on the best quality obtainable in the original photograph. That doesn't mean that you must submit prints to a newspaper as you would to a salon—many a salon beauty would look terrible in newsprint.

If time is pushing, negatives (developed or undeveloped) are acceptable provided they are properly identified and captions are included. The average picture editor, however, would much rather have a print on his desk.

As to the money you are going to make, the average price paid for a news picture is $3. It depends somewhat on the policy of the editor who makes the purchase. The average, however, is not necessarily the rule. A simple "mug" shot of an ordinary man who figures in the ordinary news in an ordinary way may bring you only $1. An unusual picture, expertly handled, may be worth $10 or more.

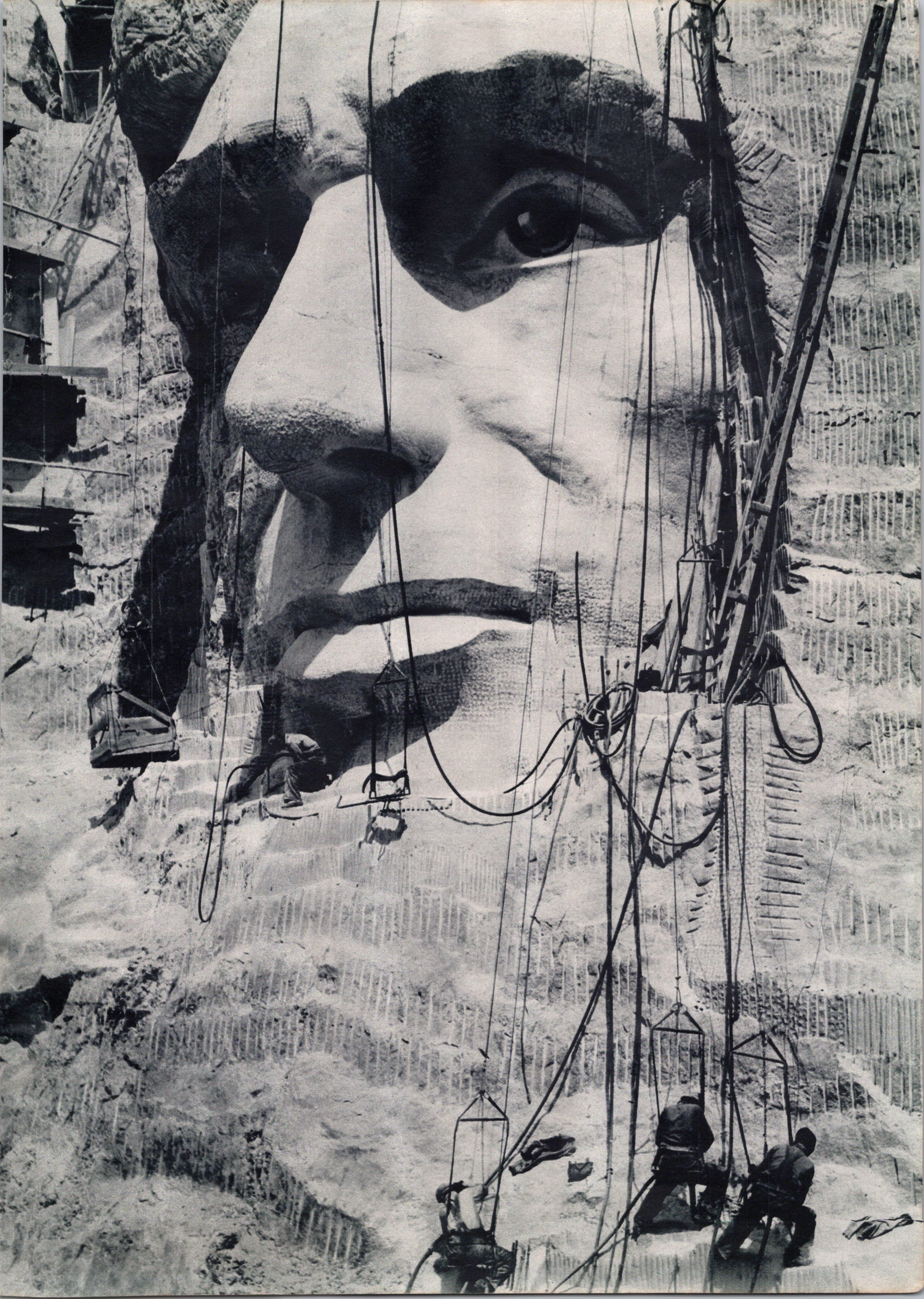
Let's take one example. To a free-lance who spent a couple of hours one night and went to some extra trouble for the newspaper, went a check for $10 and the return of his negative so that he could

(Continued on page 86)

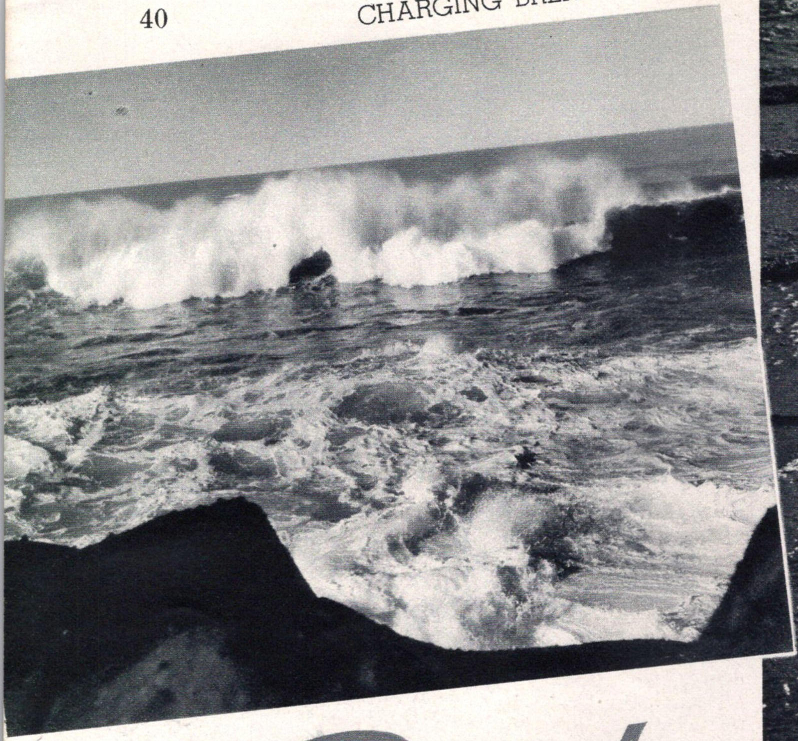
Picture of the Month (opposite page)

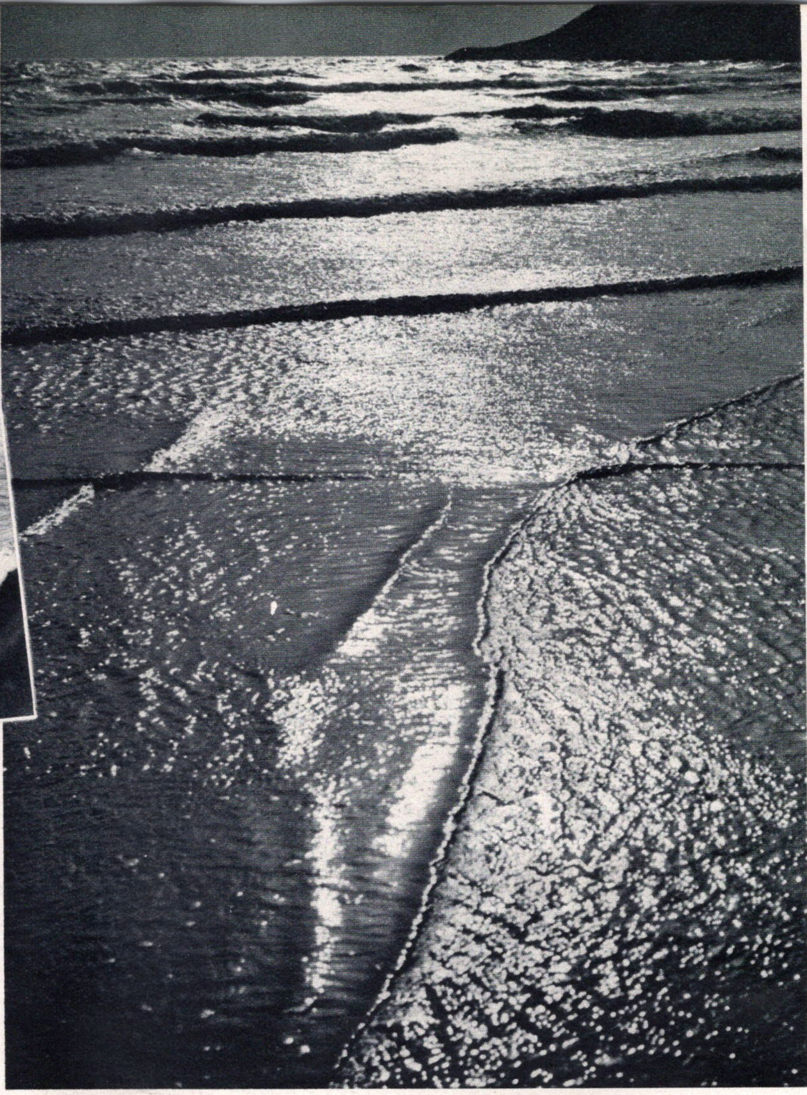
ABRAHAM LINCOLN . . . . by Alfred T. Palmer

Utilizing the photographic opportunities offered by the colossal heads carved out of Mt. Rushmore, S. D., Alfred Palmer created a fascinating portrait study, adding to its interest by including the figures of the workers. [Technical Data on page 72]



CHARGING BREAKER





RIPPLING SURF

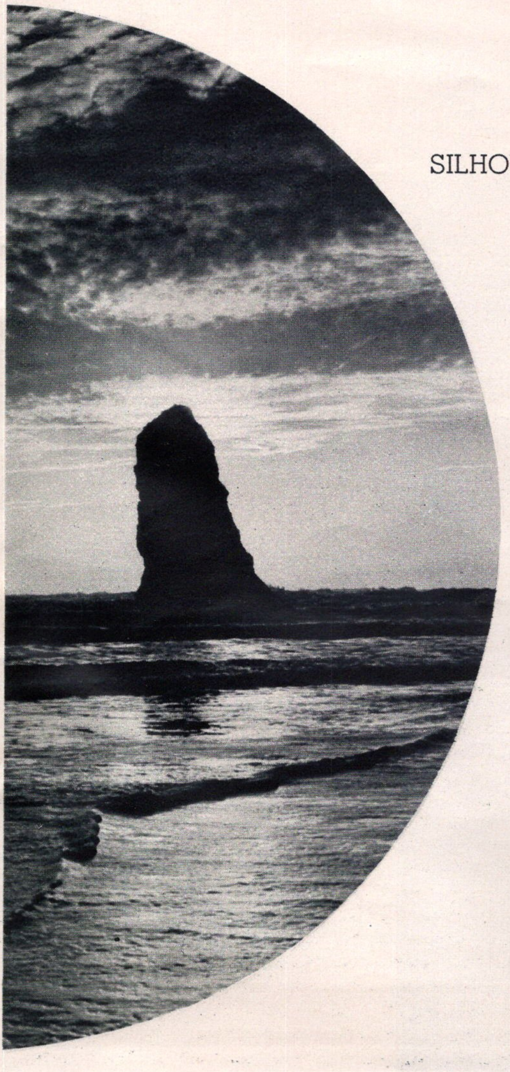
Surf

THE sea offers an unending variety of pictures, if you only learn to see them. Ray Atkeson of Portland, Ore., captured many of its changing moods on a crisp, wintry day.

(For Technical Data see page 72)

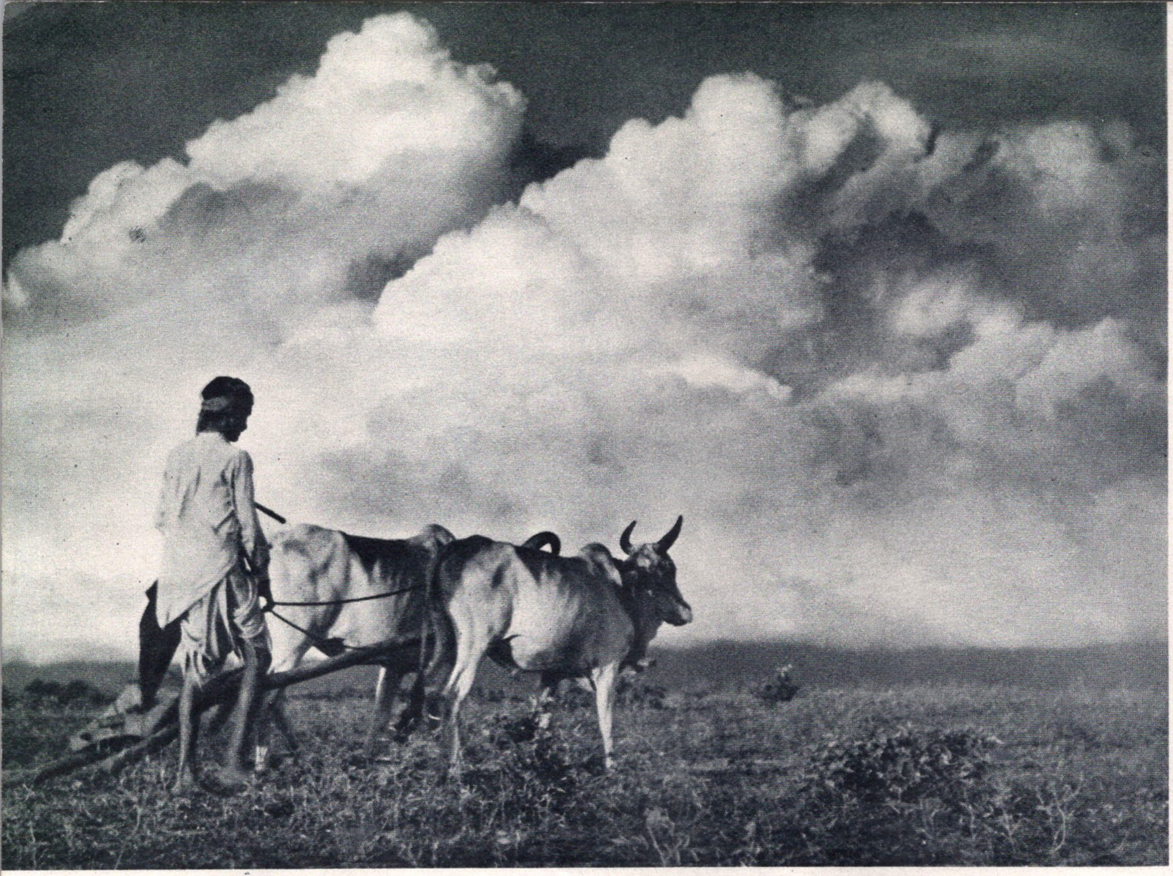
SUNRISE

EXPLOSION



SILHOUETTES

SEASHORE BANQUET

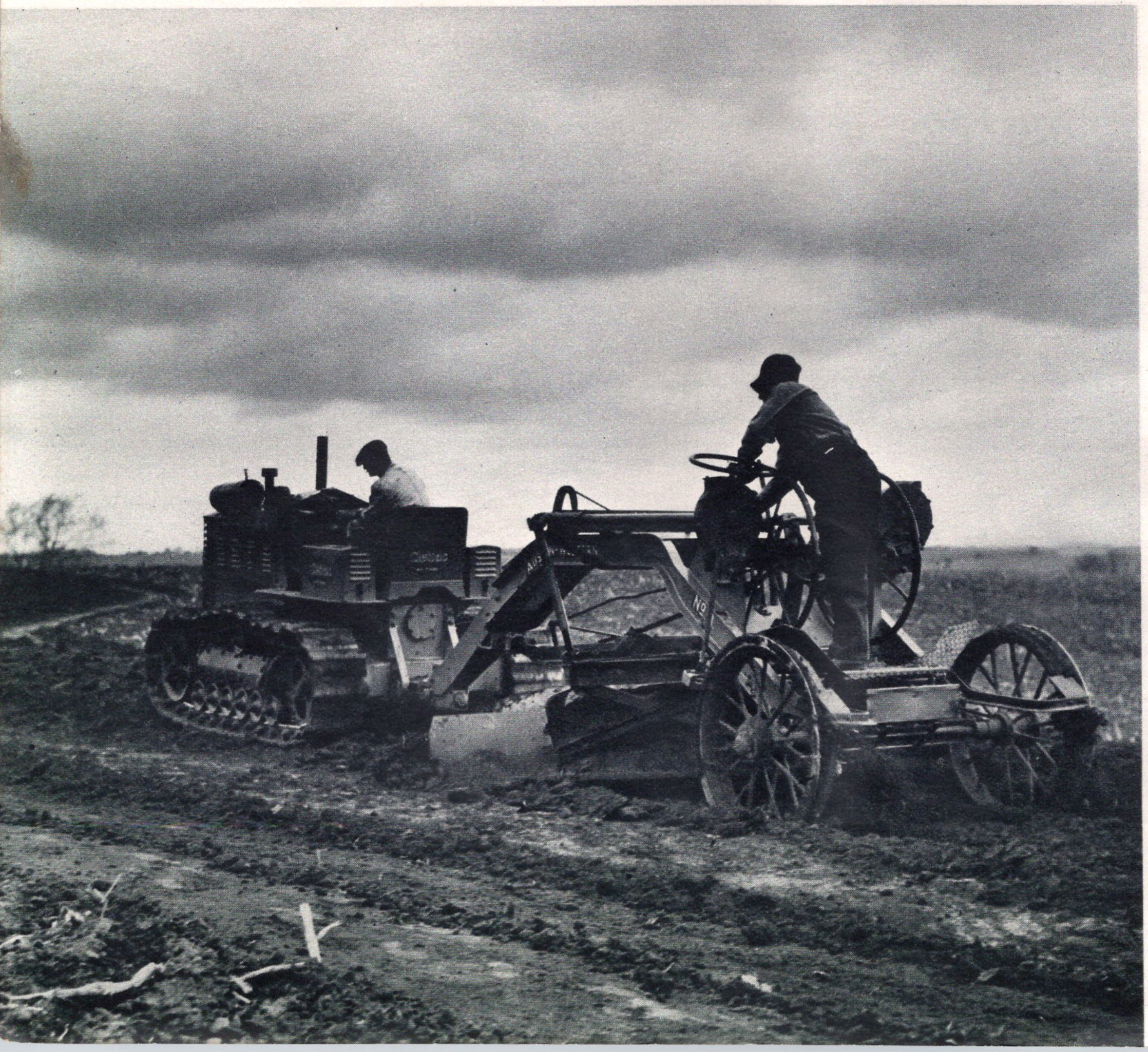


FARMER'S DELIGHT
by Akhtar K. Syed,
Palampur, India

TILLERS

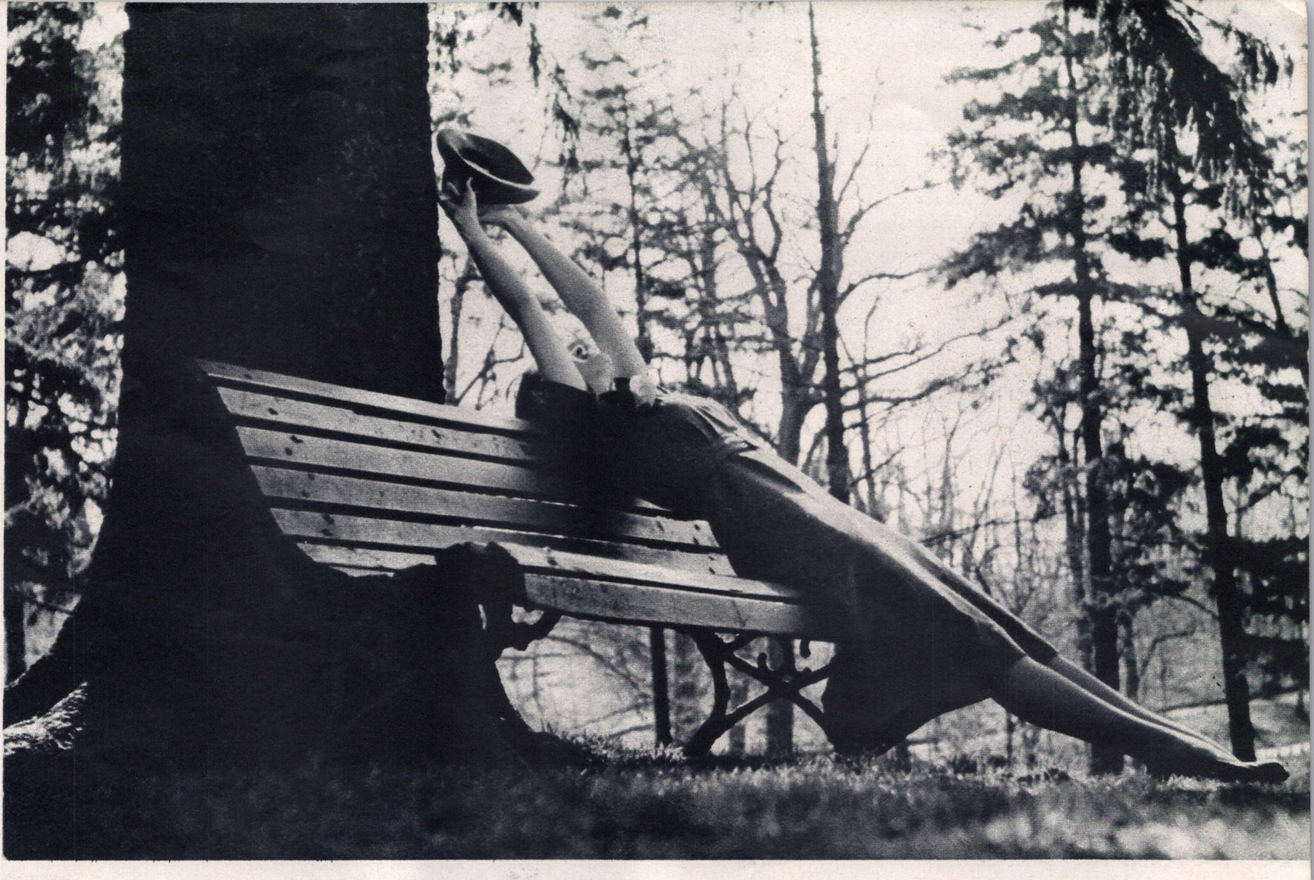
Life on the farm may seem monotonous, but to the photographer it can be packed with drama. Witness the picture of the Indian peasant tilling his soil; contrast this scene with machine age agriculture on an American farm.

(For Technical Data see page 72)



TERRACING .....by
J. W. McManigal,
Horton, Kas.

EARLY APRIL...by Harold Harvey, New York, N. Y.

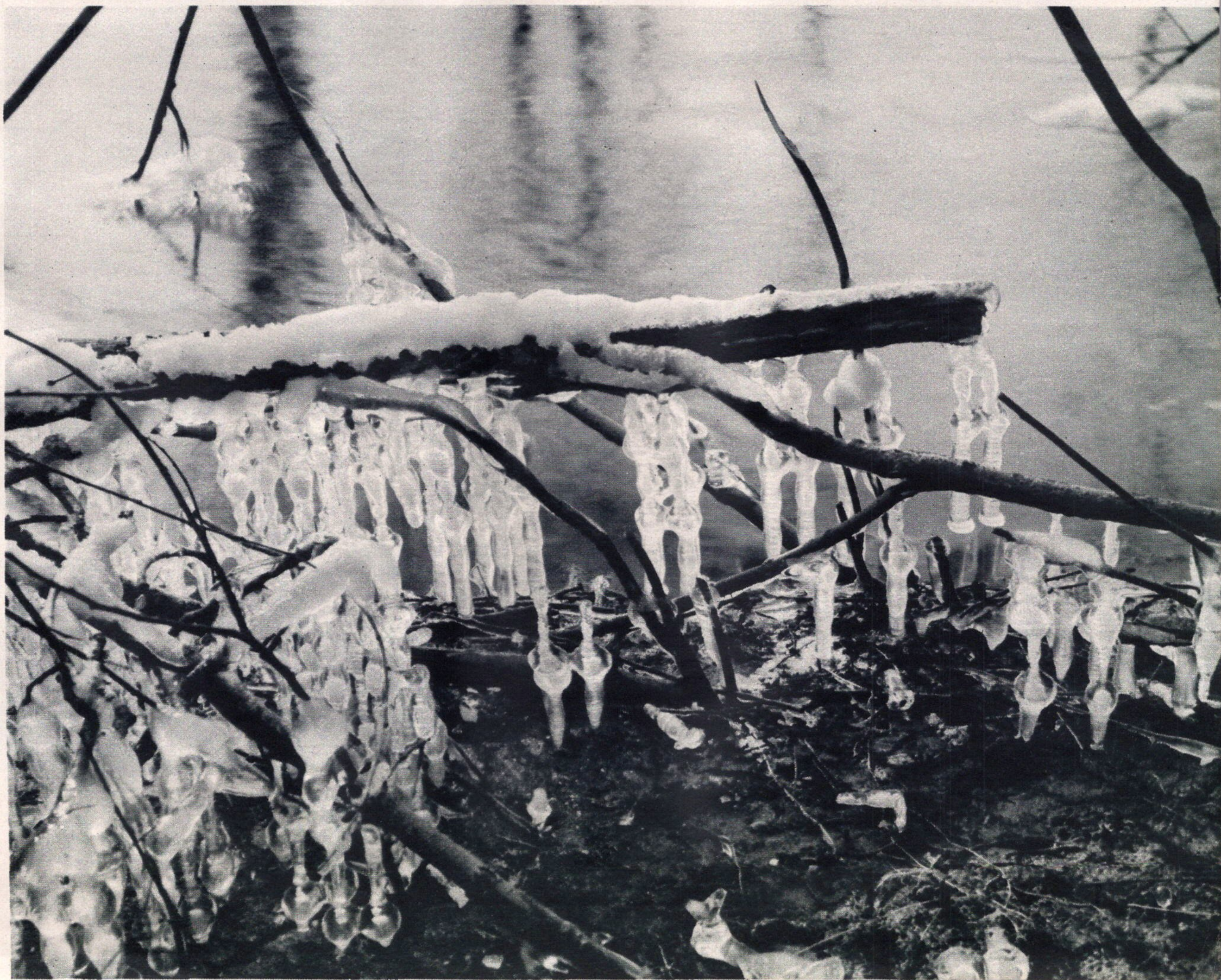


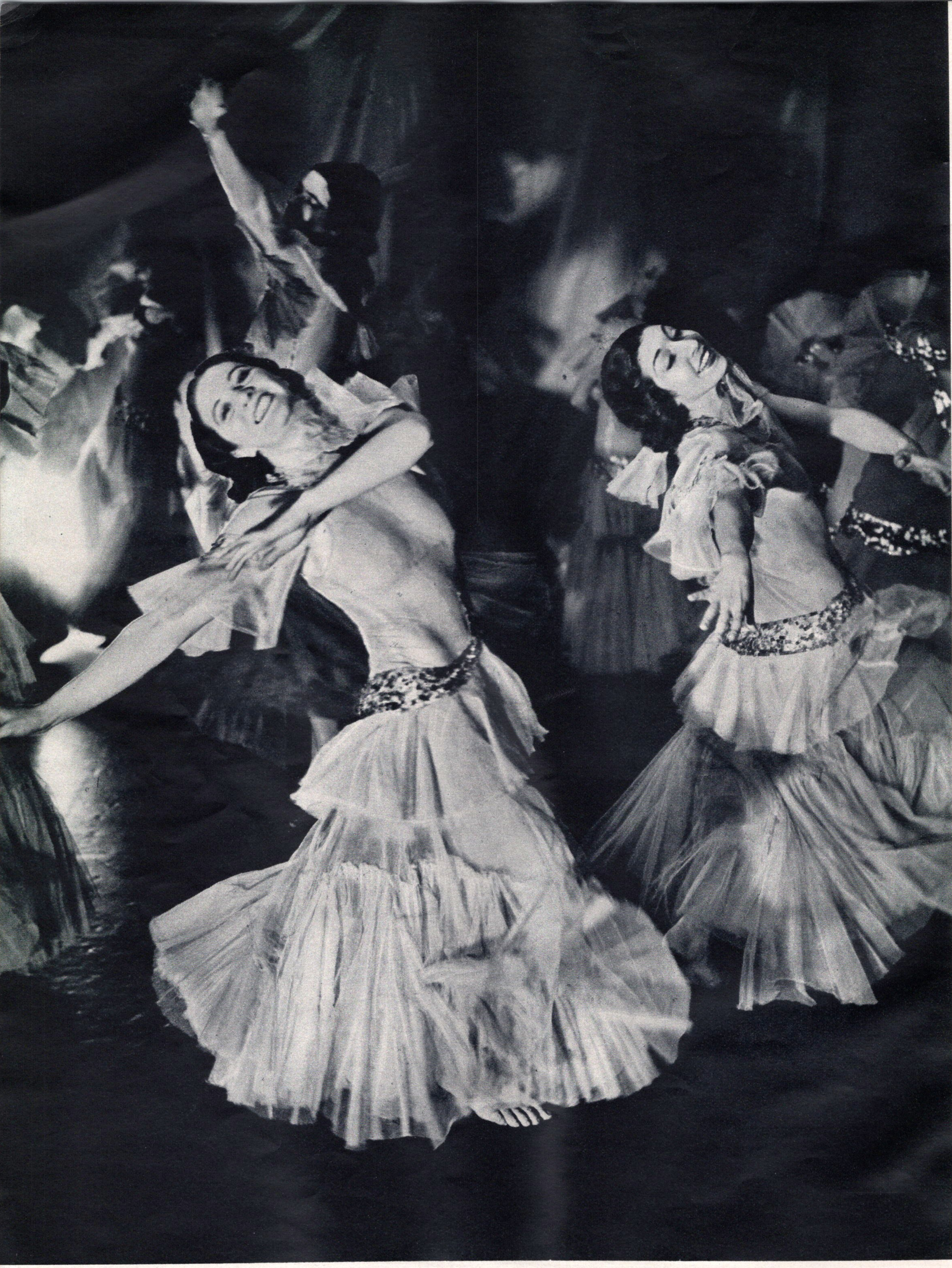
SPRING

The first signs of spring are more symbolic than real. It takes a fine picture sense to discover them and make them visible to all. But once photographed, they are as obvious as flowers breaking through snow.

(For Technical Data see page 72)

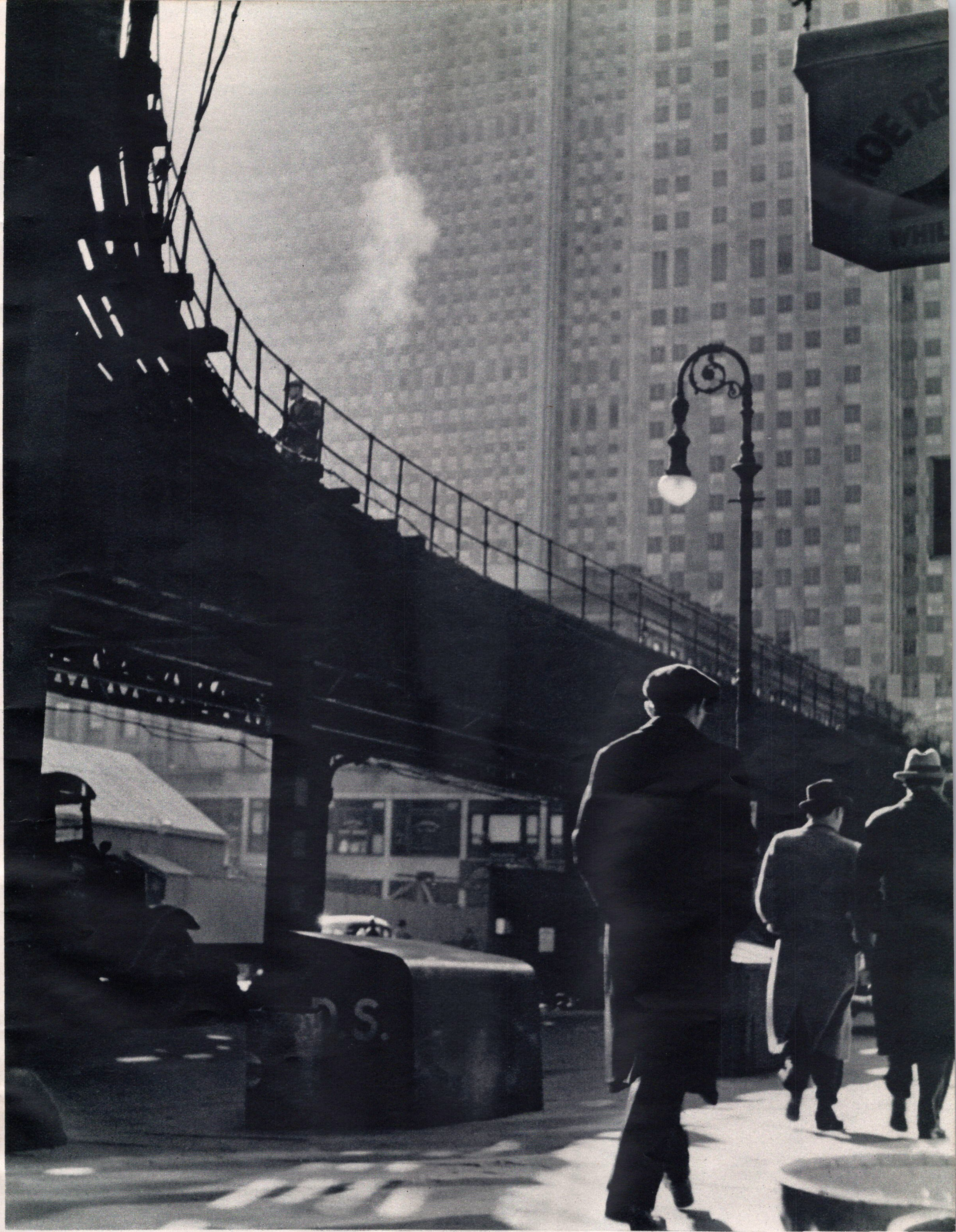
SIGN OF SPRING, by Frank Fenner, Jr., Chicago, Ill.





DANCERS by Remie Lohse

From the photographer's forthcoming book, The Miniature Camera in Professional Hands.



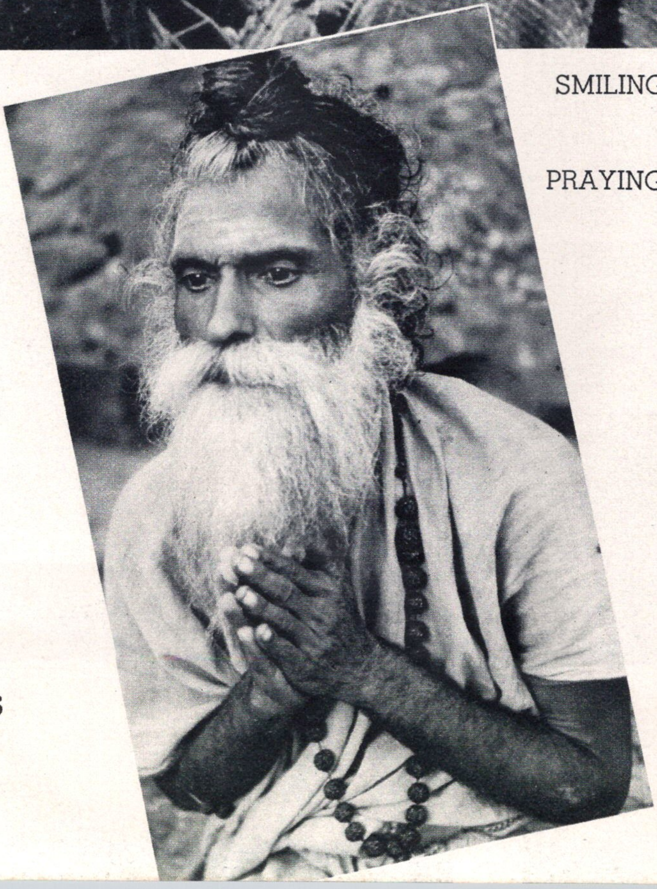
APRIL by Leo Nejelski

YOUNG GIRL

THAKUR BEAUTY

SMILING KURD

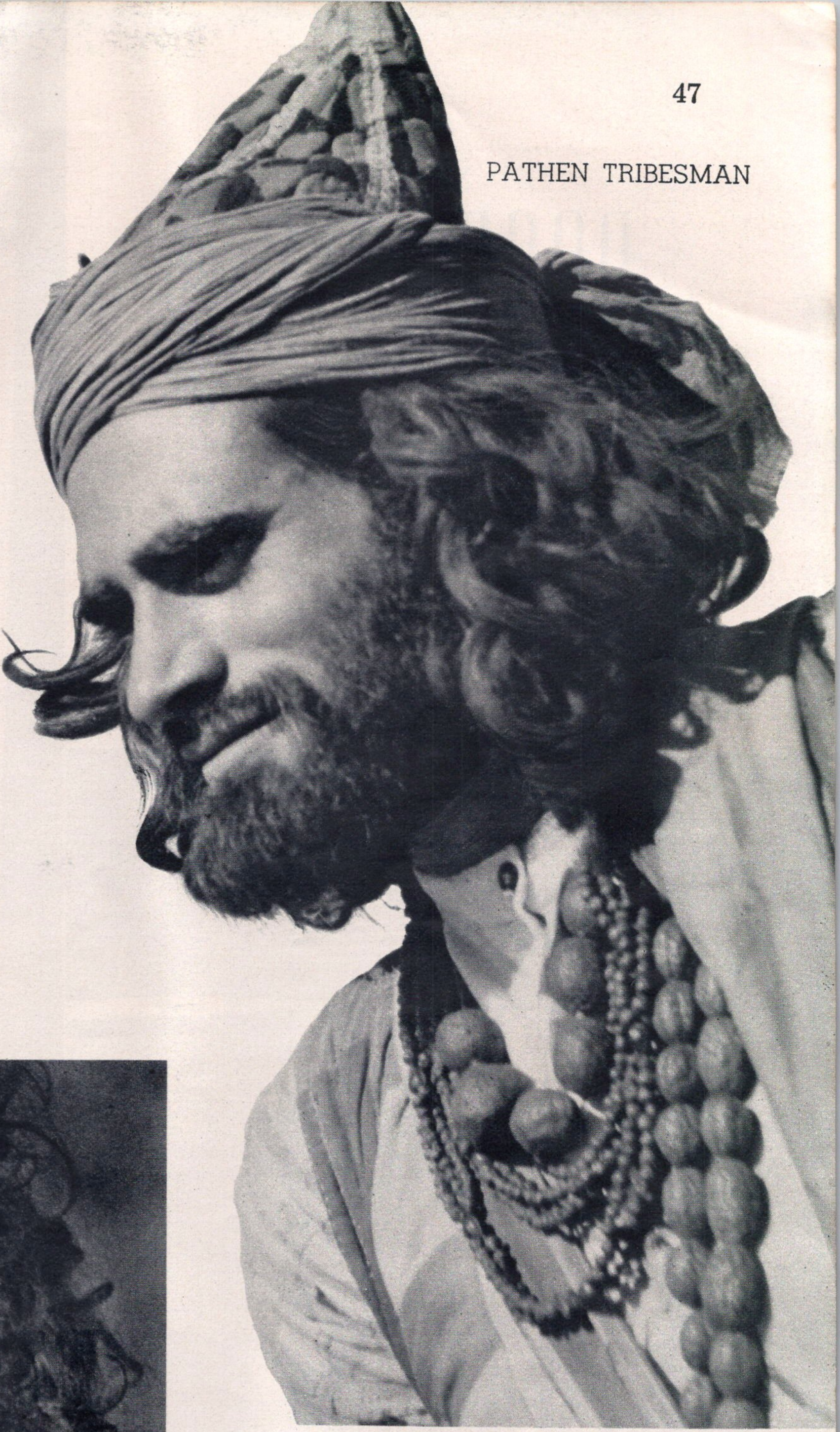
PRAYING SADHU



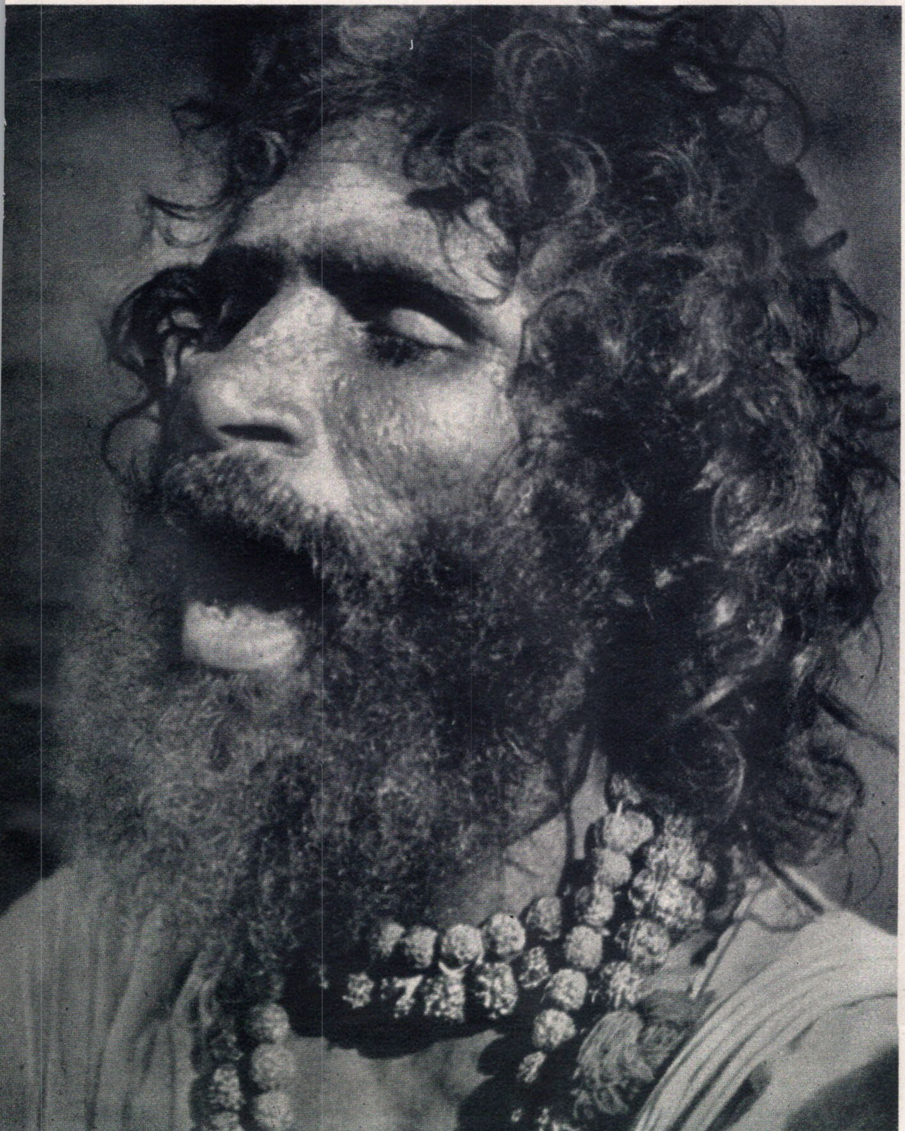
From India

RICH in photographic possibilities, India is the ideal place for "face hunting." Here's a selection from the many interesting types bagged by Stanley Jepson, A.R.P.S., of Bombay, India.

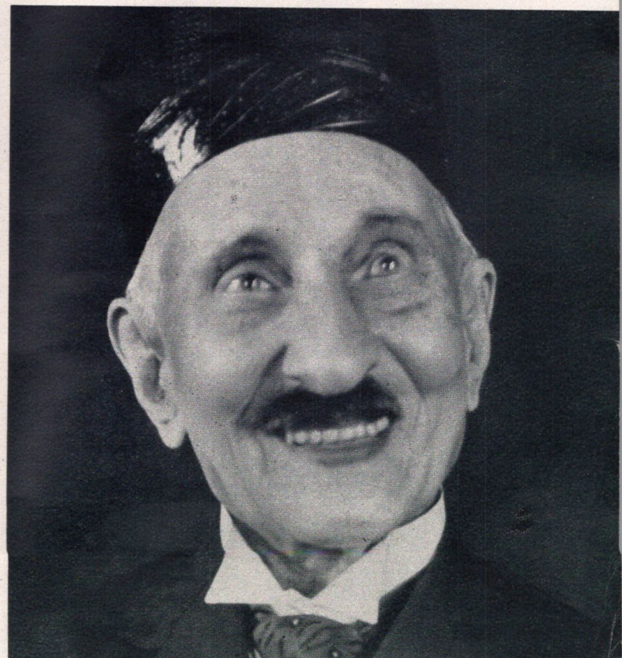
PATHEN TRIBESMAN



BLIND BEGGAR



SIR TEMULJI NARIMAN



DOORWAYS

Shooting into the light from indoors produces charming silhouette effects. Photographer Pragher shot through a Spanish bead curtain for added interest while Paul Faris of Conway, Ark., captured the design on a wrought iron door.

(For Technical Data see page 72)

STATIONS

Two prize winning pictures, both based on the desire not merely to record a scene but to capture the peculiar atmosphere surrounding stations.

(For Technical Data see page 72)

The Late Mr. Jones..........by
Harvey Falk, New York, N. Y.

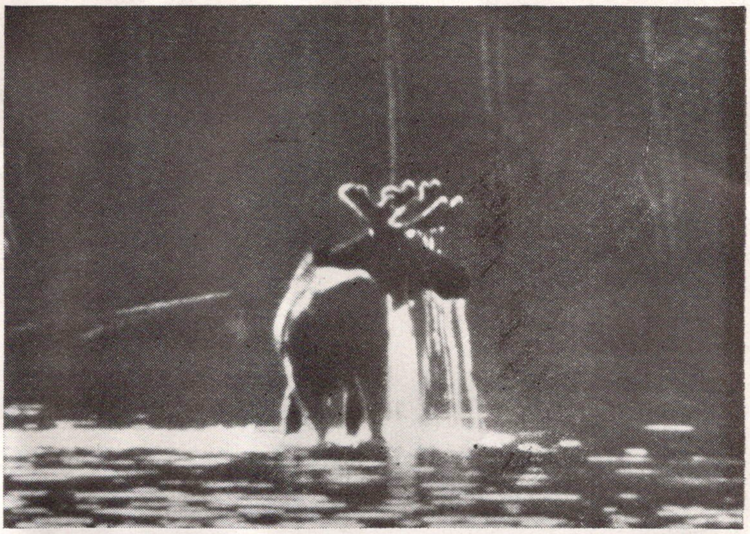
Between Trains ....by
Kingsley W. Given, Manhattan, Kas.

STUDY   by David C. Kent

STILLS from your MOVIE FRAMES

by ORMAL I. SPRUNGMAN
Amateur Cinematographer, Minneapolis, Minn.

Many fine still pictures can be gleaned from your color and black-and-white movie films by the simple method outlined here.


Striking telephoto shot of a bull moose enlarged from a movie frame.

MORE candid than minicam filming, every foot of your reversal movie film offers surprising possibilities for blow-ups into promising stills. In fact, some amateurs already have asked, "Why buy a still camera? Why not shoot movies and stills with one and the same outfit?"

That is all very well, but the average 8 mm. or 16 mm. movie camera, with its 1/30 to 1/50 second shutter speed, is not particularly adapted to stopping rapid action as are most still cameras. Besides, the fact that the size of each movie frame is very small means that the extreme enlargement necessary cannot possibly produce a pin-sharp print of contact quality. Sometimes this soft-focus effect is unusually fitting for a scenic view or a portrait, adding to the charm of the finished print. However, amateurs should strive for better detailed enlargements by selecting only those frames which are sharp and properly exposed.

This is done by examining each individual frame in a desirable sequence under a powerful reading glass, in one of the commercial film viewers now on the market, or by single-frame projection of the sequence itself. The latter method should never be attempted with projectors unfitted for single-frame showings, where high powered lamps are used, for there is always the danger of warping or blistering the film.

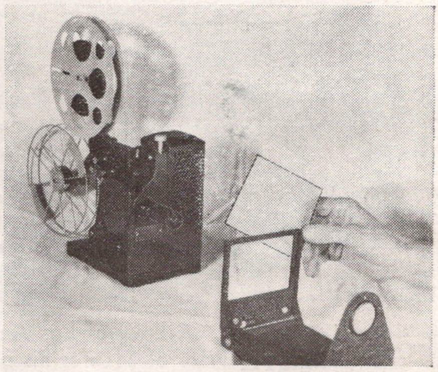
After making the selection, he sure that the frame is dirt-free by wiping off both sides of the film with a cloth moistened with cine film cleaning solution. Good enlargements cannot be made from a movie frame that is covered with lint or streaked with oil from the projector mechanism. If the dust is imbedded in the emulsion, retouching of the negative or the final print may be necessary.

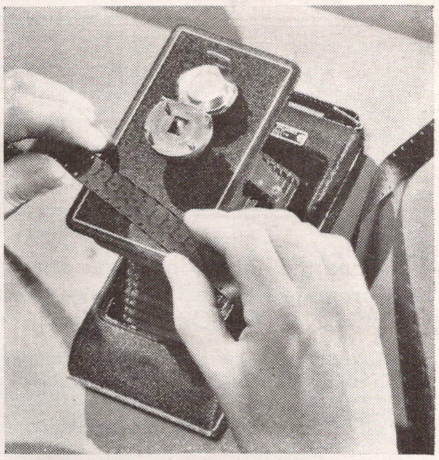
If you plan to enlarge more than one frame from a given reel, mark each spot by means of a colored string or thread woven through sprocket holes adjoining each image. Or affix a tiny strip of Scotch tape to the shiny side of the neighboring frame. Some film editing outfits nick out the edge of the desired frame. Do not use pins or paper clips, however, for these are bound to scratch the emulsion, tear the film base, or injure the projector itself if accidentally left in the reel.

What types of movie scenes make best enlargements? Chiefly closeups showing good detail and expression. These may be portraits, telephoto shots of wild game, near views of clearly outlined objects, and even double exposed title frames. Although landscapes with cloud puffs enlarge nicely, avoid extremely long shots of far-away figures or buildings. Steer clear of scenes blurred by careless camera handling or objects in motion.

Unless the pace is slow, such action scenes of fleeing animals or fast moving humans are bound to be blurred, and the speedier the movement the greater the blur on the individual frame. However, most every sequence carries at least one

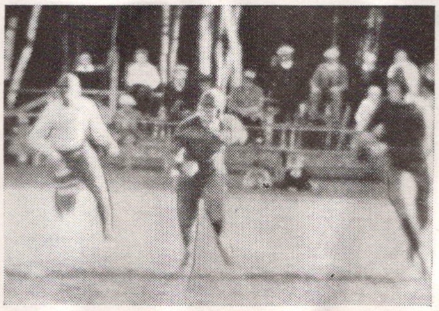
(*Continued on page* 80)


The easel on your titler will serve as a holder for the focusing card and cut film.

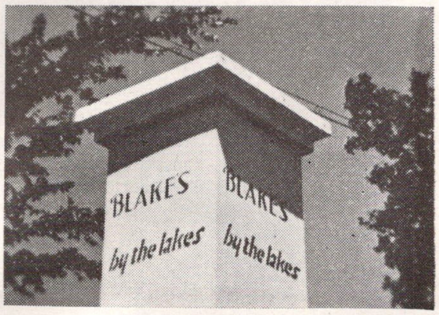

A device for making still negatives from 16 mm. movie frames is made by Eastman.

A closeup still made from a 16 mm. Kodachrome frame on Eastman Super-XX film.

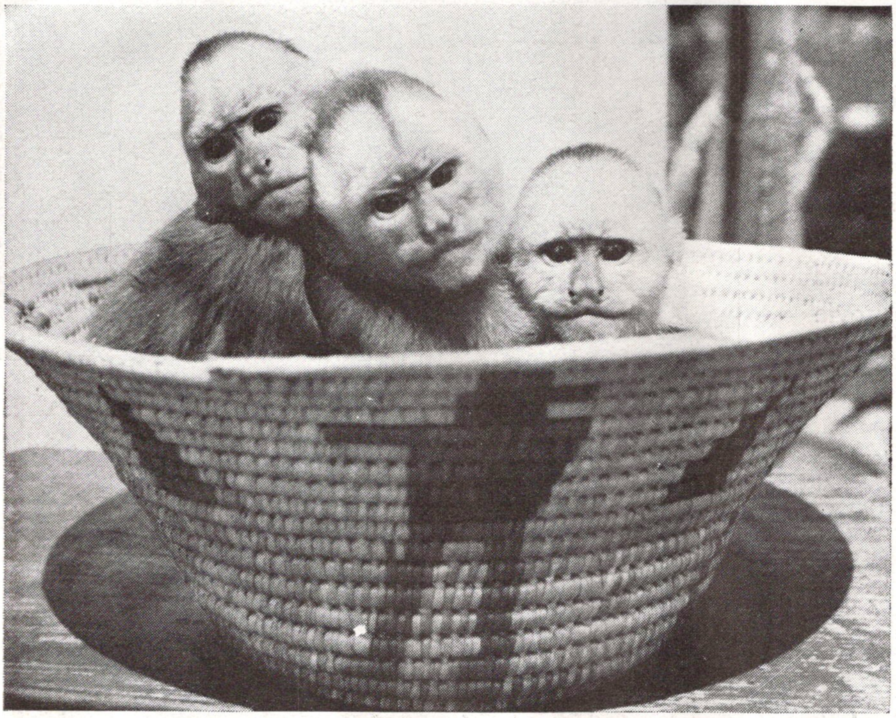
Frames from an action sequence are often blurred and not suitable for still shots.



Stills from title frames or sign closeups will serve to explain a print series.



WINNERS IN THE Popular Photography PET PICTURE CONTEST

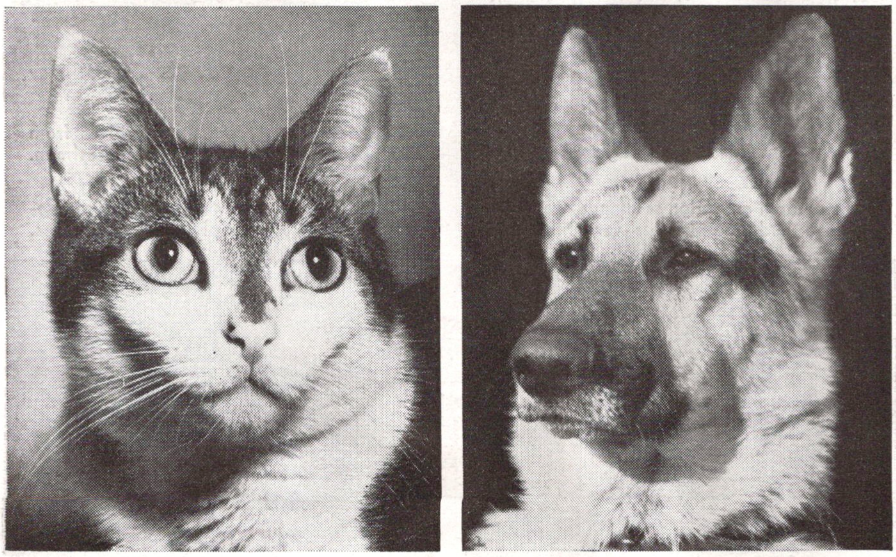


3rd I. O. Levy of Los Angeles, Calif., receives the Third Prize of $10 for his picture, "Tom, Dick, and Harry." The picture was made with a National Graflex camera on Eastman Super Sensitive Panchromatic film, ƒ 4.5, 1/50 sec.

ANNOUNCING A NEW PICTURE CONTEST

Turn to page 54 and read the details of the Charming Children Picture Contest which starts this month.

Among the entries there was a large number of excellent animal portraits. Representative are the $2 award winners (left) "Winsome," by Celone G. Coffin, New York City, and (right) "Fritz," by Hadley Parrot, Concord, Mass.



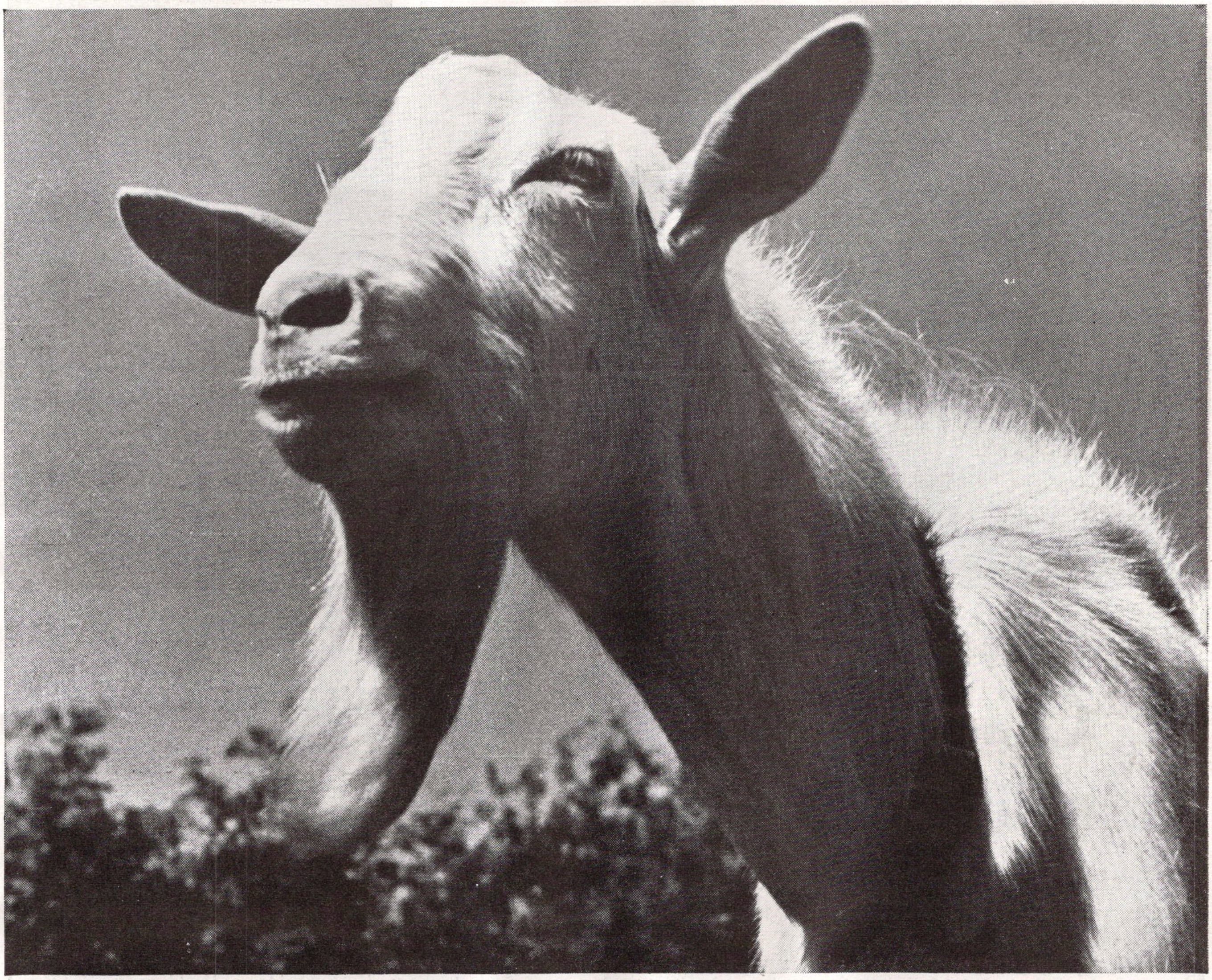
HERE are the winners in the Pet Picture Contest. They have every reason to be proud, for their pictures were selected from among thousands of excellent entries.

The most amazing thing about this contest was the tremendous number of really outstanding pictures submitted. Literally hundreds of entries would have deserved to appear in print. Consequently, judging this contest was quite a job as our judges examined every print and sincerely tried to locate the best. They frequently disagreed—which may be a consolation to those who won no prizes. Nevertheless, they, too, should join us in congratulating the winners.

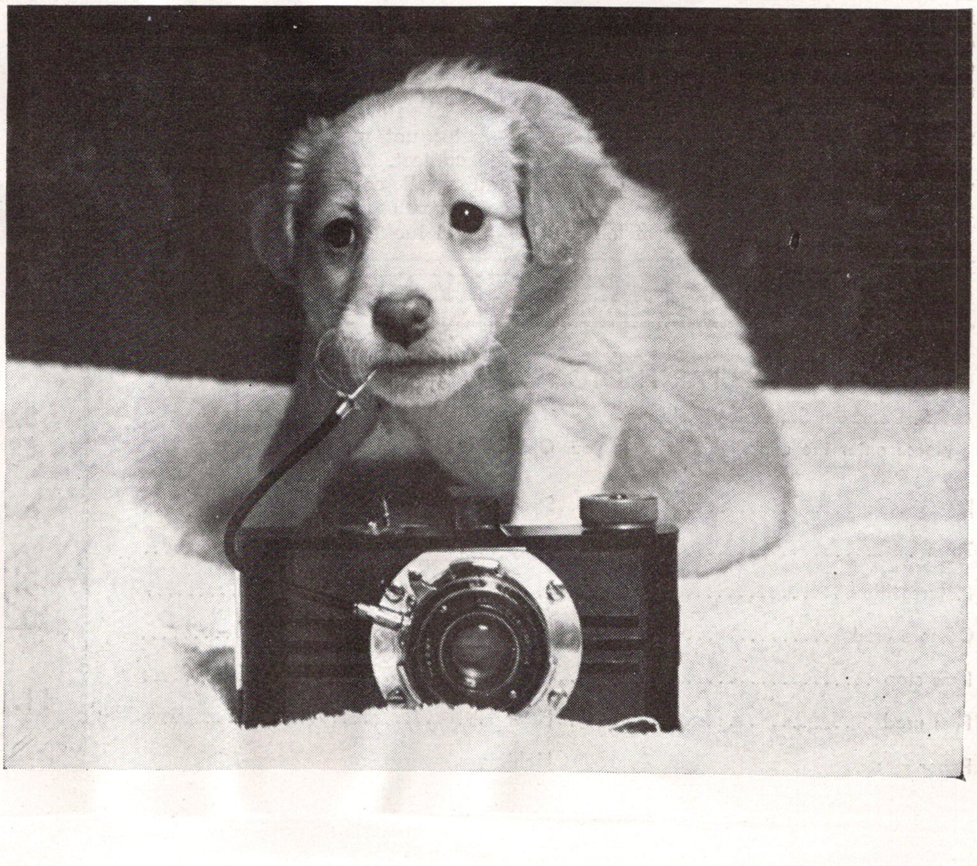
●

PRIZES OF $2 EACH

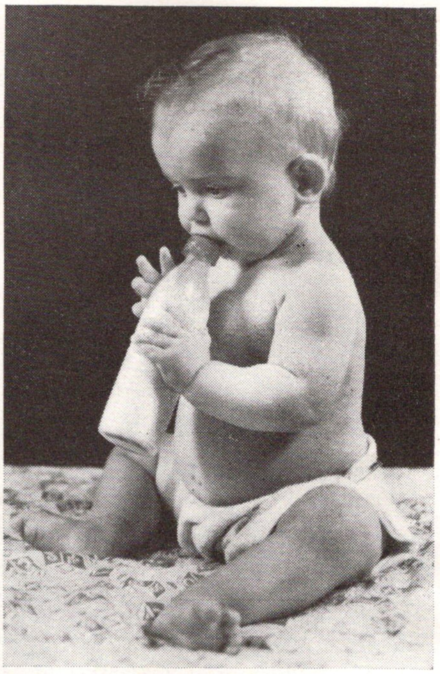
Nina Albrecht, Forest Hills, N. Y.; Alma Altman, Long Beach, Calif.; Harry Bartholomew, Stroudsburg, Pa.; R. E. Bolton, Alexandria, La.; W. A. Broadley, East Walpole, Mass.; G. C. Christman, East Greenville, Pa.; Celone G. Coffin, New York City; E. N. Dickie, Farmington, Mich.; Fern France, Hiawatha, Kansas; Howard Gruenberger, Milwaukee, Wis.; N. E. Hall, Puente, Calif.; R. Hodgkins, Los Angeles, Calif.; Mrs. John W. Lemay, Richmond, Va.; Ken Liddell, Regina, Sask., Canada; Vernon Lilley, Alameda, Calif.; L. E. Massie, Downey, Calif.; G. R. Moon, Jr., Port Arthur, Texas; W. T. Morrison, Yonkers, N. Y.; Hadley Parrot, Concord, Mass.; L. Paulick, Arnold, Pa.; Ralph Ringer, Detroit, Mich.; Robert E. Schock, Riverhead, L. I., N. Y.; Samuel A. Skean, Trenton, N. J.; Paul Trentel, Cleveland, Ohio; R. H. Turner, Lansdowne, Pa.



1st. First Prize of $50 is awarded to Truman B. Gordon, Oil City, Pa. Entitled "Pose, Please," the picture was made with a Contax on Finopan film. A yellow-green filter was used and exposure was 1/50 sec., *f* 5.6.



2nd. Benedict B. Seidelle wins the Second Prize of $25 for his picture "Ready." He used a Rolleicord camera loaded with Superpan Press film. The exposure was made at 1/100 sec. with the lens stopped down to *f* 6.3.



Photographs by Harold M. Lambert, Philadelphia, Penna.

POPULAR PHOTOGRAPHY

Charming Children Picture Contest

Any Amateur May Enter. Send in Your Three Best Prints. Win One of the 28 Cash Prizes.

EVERY amateur has at one time or other photographed children, whether his own or those of relatives and friends. Made with no gain in mind other than obtaining good pictures, many of these photographs are, no doubt, outstanding examples of child photography.

Now is the time to lift them from their frames or dig them from your files. POPULAR PHOTOGRAPHY wants to see them and wants to reward the best amateur work in this field with cash prizes.

Our contest calls for pictures of "charming children." They need not be beauty prize winners as long as they have charm and you found a way to capture it in your picture. Natural expression and human interest will count as much in the opinion of the judges as photographic excellence, and pictures of children taken at any age are eligible.

Enter not more than three prints in the contest. Avoid hand colored prints and small contact prints. Follow the contest rules closely.

Good luck!

USE THIS ENTRY BLANK

Contest Editor, POPULAR PHOTOGRAPHY
608 S. Dearborn St., Chicago, Ill.

Please enter the enclosed picture in your Charming Children Picture Contest.

Name .... Street ....

Town .... State ....

Picture title ....

Camera used .... Lens ....

Lens stop .... Exposure ....

Film used .... Filter ....

Paper .... Lighting ....

★ ★ ★ ★ ★

RULES OF CONTEST:

1. Contest open only to amateurs (persons whose vocation is other than photography).
2. Submit not more than 3 entries, not larger than 8x10, preferably unmounted.
3. All photographs must carry on the back name and address of entrant. Attach securely to every entry the filled in entry blank printed below or a facsimile.
4. Pictures will be returned only if accompanied by a self addressed and stamped envelope. Postage alone will be considered insufficient. POPULAR PHOTOGRAPHY does not assume any responsibility for the loss or damage of entries.
5. Address all entries to Charming Children Contest Editor, POPULAR PHOTOGRAPHY, 608 S. Dearborn St., Chicago, Ill.
6. PRIZES: First Prize, $50; Second Prize, $25; Third Prize, $10; 25 prizes of $2 each. In case of ties, duplicate prizes will be awarded.
7. The editors of POPULAR PHOTOGRAPHY will be the judges in the contest. Their decision is accepted as final by all contestants.
8. All entries must be in the hands of the Contest Editor by May 1, 1939. The winners will be announced in the July issue of POPULAR PHOTOGRAPHY.
9. POPULAR PHOTOGRAPHY acquires, by virtue of payment of the prizes, the publication rights to the prize-winning photographs.
10. The Contest Editor regrets that he is unable to entertain correspondence of any kind regarding entries.
11. Employees of POPULAR PHOTOGRAPHY, the Ziff-Davis Publishing Co., and their families are not permitted to enter this contest.

Thoughtful Portraiture

by WILLIAM CONWAY

The quality of a picture is determined by the idea behind it as well as the proficiency with which it is technically executed.

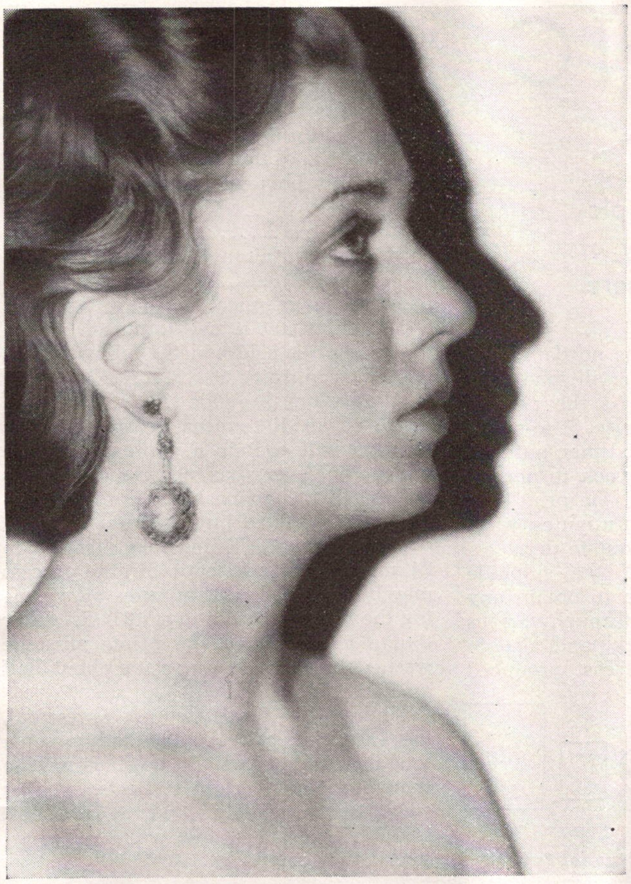


Fig. 1. In making this portrait, J. Vincent Lewis successfully carried out the idea projected in the title, "Cameo."

THERE is considerably more to making a portrait than the mere manipulation of camera and lights. The thought that has been put into the portrait before the subject is posed, before any equipment is set up, is the determining factor between producing a run-of-the-mine picture or a portrait of salon quality.

J. Vincent Lewis, internationally known portrait photographer of Bluefield, W.Va., whose famous salon print *The Forgotten Man* appeared as the Picture of the Month in the January, 1938, issue of POPULAR PHOTOGRAPHY, offers the three photographs reproduced on this page as an excellent example of the importance of thinking out pictures.

The picture shown in Fig. 2 was not taken by Mr. Lewis but by another photographer. The other two portraits entitled *Cameo* and *Composition* are of the same girl and were made by Mr. Lewis. In making them he did not touch a camera or light until he had planned his approach to the problem.

"The subject used in making these pictures," said Mr. Lewis, "came into my studio and defied me to make a really good picture of her. She tossed a print [Fig. 2] on the desk in front of me and said, 'This is the result of my latest attempt to obtain a portrait, and previous attempts have resulted likewise.'

"I did not try to flatter this co-ed of the University of Illinois when I told her that she had attractive features which could be emphasized and *should* be emphasized. I went so far as to say that she also had defects which should be minimized, to get a really worthwhile picture.

"It was explained to her that there were two methods of making a portrait which might be considered of salon quality. One method was to decide first upon the idea and then find a suitable subject to represent it. The other method was to select a subject first and then build up an idea in keeping with, and suitable to, the subject chosen. (In *The Forgotten Man* I used the first method. *Cameo* is the result of the second method.)

"This model had an attractive profile, and I advised her that I would attempt to build up an idea in which it could be used. After telling her to return to the studio in a week, I spent my spare time thinking about the matter.

"Finally the thought occurred to me that her profile could be used to represent a cameo stone—a double overlay, such as is used in rings—using *her* face as one of the faces, and the *shadow* of her face as the other.

"When she returned to the studio a week later, I went to work with this idea in mind. After the subject was posed very close to a light background, a single undiffused, concentrating spotlight was placed to the left of, and almost touching, the lens. This produced the deep, concentric shadow of her profile. Then, to further carry out the idea of a cameo, I put a light film of coldcream on her face to give it the luster that a cameo ordinary has. *Click* went the shutter, and the picture was made."

Thus the girl who couldn't get a good photograph of herself was used as the subject for an outstanding salon print that has hung in no less than ten international salons abroad, and in England won the certificate Award of the City of London International Salon. In making the photograph Mr. Lewis used a 5 x 7 Eastman studio camera with an f 4.5 Bausch and Lomb Tessar lens. The exposure was 1/10 second at f 6.8 on Eastman Portrait Panchromatic film.

Later Mr. Lewis used the same girl, Dorsey Conners, as a model for the salon print *Composition*. This print has also received honors in many international salons. The difference between the original photograph made with little thought behind it, and the two conceived after careful study, composition, and arrangement, is so striking that the photographs alone well bear out the importance of thoughtful portraiture.

"In making *any* portrait," Mr. Lewis concluded, "we should look for the subject's *faults* and minimize them, as well as attempt to emphasize the good points. I sincerely believe that a picture cannot be made in a minute, regardless of the speed of our lenses and films!"

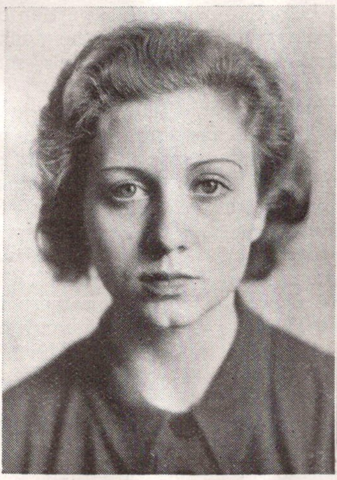


Fig. 2. This picture of the same girl shown in Fig. 1 and Fig. 3 exhibits little thought behind it.

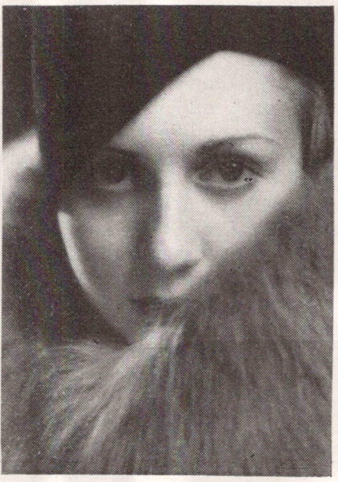


Fig. 3. Entitled "Composition," this salon portrait by J. Vincent Lewis justifies its title.

SEPIA TONING

by PRISCILLA M. PENNELL

The process of adding rich sepia tones to your pictures is not difficult and well within the ability of any amateur. Try the toning method outlined here.

THE making of sepia prints, though a simple routine to the profession, is often looked upon as a difficult and involved process by the amateur who may hesitate to attempt it. The process is really very easy and affords the means of giving added richness to many a fine print.

The one important thing to remember is that success in sepia depends almost entirely on the black-and-white print. The softer grades of contact papers and all enlarging papers give good tones, but the harder contact papers tend toward an undesirable yellowish cast when redeveloped for sepia. However, this may be overcome by the control process outlined in a later paragraph. When making the black-and-white print, time the exposure so that it will receive full development and be a full shade darker than desired for the finished result. A slightly over-timed and underdeveloped print may look all right but it will not make a good sepia. The prints must be thoroughly fixed and *thoroughly washed.* Any traces of hypo will cause uneven streaks. Clean trays are essential, as any contact with iron will cause greenish-blue spots on the sepia print. If the water supply contains particles of iron rust it may be filtered by tying a piece of cotton over the mouth of the faucet with cheese cloth.

Three solutions are necessary—the reducer or bleaching bath, the toner, and the hardening bath. These solutions are easy to prepare and do not depend on accurate measurements, as more or less of the chemical will simply affect the speed of the process. You will need at least three trays. There must be a rinse of clean water after each chemical bath and this can be done in your regular print washer or basin unless additional trays are available for this purpose.

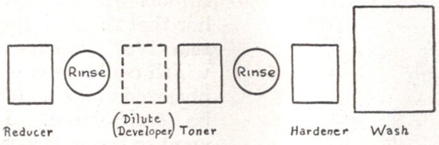
For the bleacher, measure about ½ oz. of potassium ferricyanide and ½ oz. potassium bromide into a tray and add 16 oz. of water.

The toning bath is made by adding 16 oz. of water to ½ oz. sodium sulphide. (*Not* sulphite.)

For the hardening solution use one part stock hardener (as used for hypo) to five parts of water. *Do not use the fixing bath*—only the hardener. If you do not have any stock hardener, one part of potasssium alum in ten parts of water will do the trick.

The print to be toned is immersed in the bleaching bath and left for a few moments until only the darkest areas are still visible or until bleaching has gone as far as it will. Rinse and place in the toning bath. There is no danger of its getting too dark, as it will tone only so far and then stop. As the process softens the gelatin and causes it to swell, it must be rinsed again and then put into the hardener to bring it back to normal and prevent blisters. Let the print stay in the hardener about ten minutes, wash it thoroughly, and lay it out to dry.

A simple variation of the sulphide method makes it possible to obtain any tone from the true sepia, through various browns, to a warm black, and also to counteract the yellowish cast produced by the harder grades of contact paper. A tray of very dilute paper developer—about one part developer as generally used to five parts of water—should be placed before the tray containing the sulphide toning solution. Bleach and rinse the print as usual and then place in the dilute developer, allowing it to partly redevelop before transferring it to the toning bath. The further the print is allowed to come up in the developer the colder the tone will be. It must be agitated continually, handling by the corners to prevent cracking the emulsion. It can be brought back entirely in the developer but will be a warmer black than in the original.



Sequence of processing steps for toning.

A little experimenting will be necessary to determine how long to leave the print in the developer before transferring it to the toning bath to get just the tone desired. This method is not recommended for quantity production, as it is difficult to obtain exactly the same tone on several prints, but it offers possibilities for very lovely effects for special cases and exhibition prints. For this double redeveloping process the original print need not be made darker as is necessary for straight sepias.

Occasionally, as when the print is to be colored, it may be desirable to tone the print only locally. This may be done in several ways. One method is to apply the reducer to the parts to be toned with a piece of cotton or a paint brush. When it is placed in the sulphide only the bleached parts will turn sepia. The easiest and most satisfactory means of local toning is to cover all the parts to remain black-and-white with rubber cement. Immerse the print in the solutions as usual; only the uncovered parts will turn sepia. Of course, double redevelopment may be used here also if desired. After the print is dry the cement can easily be rubbed off with the fingers.

For uniformity of tone in quantity lots, the hypo-alum formula, long used by portrait photographers, is given below:

Hypo	8 oz.
Potassium alum	2 oz.
Water	64 oz.

Dissolve the chemicals in the order given and boil for about five minutes. When the solution is cold add the following:

Silver nitrate	25 gr.
Potassium bromide	25 gr.

dissolved in 10 ounces of water. The solution will contain a white precipitate which, however, has no bearing on its action. Prints to be toned in this solution must be fixed but need not be thoroughly washed. Toning takes from 8 to 24 hours in the cold bath, but the process may be hastened to 30 minutes by warming the solution to not over 125° F. After toning is completed the prints must be washed in running water for about half an hour.

Finding his first attempts successful, the enthusiast may be tempted to sepia tone everything in sight, but it is well to remember that certain subjects, such as snow, surf, and night scenes, are best rendered in black and white or toned some other color.—

You Need a Tripod

PROBABLY you have heard it said that a tripod is not essential. Very often, and particularly when taking closeups with the portrait attachment, a steady camera is absolutely necessary. There is no guarantee against camera movement even though, when supporting the camera against your body, you hold your breath.

The tripod prevents the camera from moving, *and* it holds it level. Sometimes, in scenes where the background is a building, the building will seem to slant or lean backward. This is due to the camera not being level.

There are times when the camera enthusiast wishes to include only a certain portion of a wider background, but when the finished picture appears, he often finds some extraneous scenery in the print. This results because the camera was hand-held, and, at the last moment as the picture was being snapped, the camera moved. No matter how steadily the camera is held, it is actually moved as the picture is snapped. At slow exposure speeds this is disastrous.

Closeups usually should be sharp in detail. Clarity is attained only when the camera is steadied, not held, upon some immovable object such as a tripod.

The tripod actually frees the mind, as it were, of a lot of useless worries. If there is none handy or available, and one is deemed necessary, place the camera upon some immovable object—a chair, table, stepladder, fence,—anything which will serve the purpose. Of course a tripod is required for time exposures.—*Montgomery Mulford, Buffalo, N.Y.*

Build This Inexpensive SPOTLIGHT

by DWIGHT W. WILLIAMSON

Amateur Photographer, Chicago, Ill.

Add interesting highlights and shadows to your indoor shots with this easily built lighting unit.

THE problem of indoor lighting had been bothering me for quite a while. How was I going to obtain a really good spotlight at very little cost? While walking through a neighborhood store I noticed an attractive display of electric heaters. Would one of those heaters work as a spotlight? Why not? The parabolic reflector has been used for years in spotlights for locomotives, automobiles, air beacons, and various kinds of searchlights.

Working on a hunch I asked the clerk if he would remove the wire guard and heating element from a heater priced at $2.49 and substitute for the latter a 60-watt bulb which is about the size of a No. 1 Photoflood. Upon plugging the heater into an outlet, we found that it threw a beam of light which would give a satisfactory spot from 2 feet to 25 feet and probably farther. The same test on a heater selling for $1.19 was not as satisfactory as the reflector was not truly parabolic and the beam had its sharpest focal point at about 10 feet.

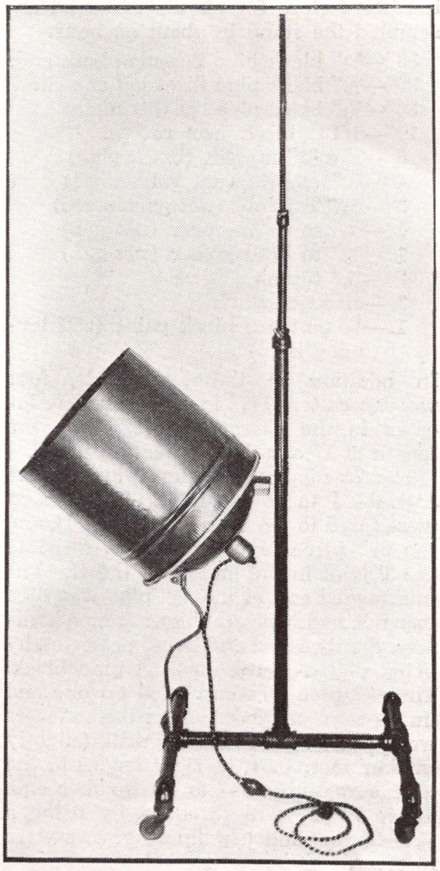
The reflector of the better heater had a chrome finish and very high polish. I did not consider any of the heaters which had copper reflectors as I figured they would throw a reddish beam of light. So a short while later I arrived home with an embryonic spotlight under my arm and several ideas for its embellishment under my hat.

First of all, the spotlight ought to have a shield around it to keep the light from hitting the camera lens when used for side or backlighting. For this purpose I picked up two lengths of stovepipe for 12c each. Each piece was 12″ long and would make a 6″ diameter pipe, but when joined circumferentially (side to side rather than end to end) they would form one pipe 12″ long and 12″ in diameter. It happened that this 12″ tube would just fit the reflector if the crimped end were placed inside the flange on the reflector. After boring several 1/8″ holes through the flange and the pipe, I secured the pieces with some small bolts.

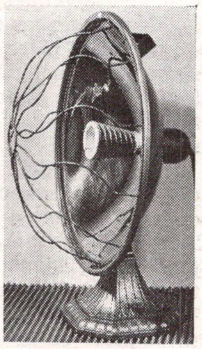
With this small amount of expense and trouble I had produced a good spotlight, and the total cost was only $2.78.

Later I decided that it would be very convenient to have my spotlight on a stand, so I proceeded to make one from ordinary black pipe. It would be a simple matter to design an efficient stand that could be built entirely from odd pieces of lumber, and the amateur who likes to work out his own construction may prefer to make a special stand to fit his particular needs.

For the benefit of those who prefer to make a stand like mine I will outline the procedure. After making a few calculations to determine what materials were needed for this project I listed the various items (with measurements) and went shopping. I obtained the following assortment of pipe and fittings at the

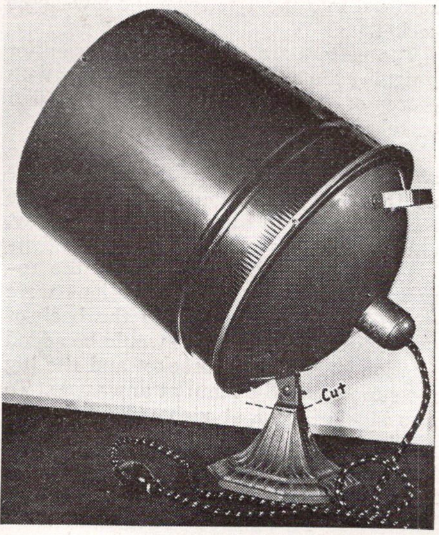


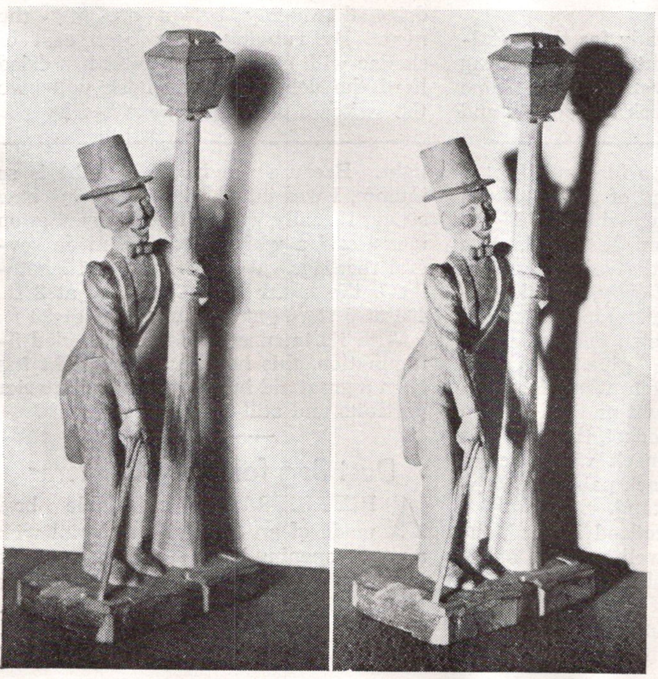
The spotlight, usually mounted on top of the stand, is shown here attached to a socket on the base which permits it to be used for low angle lighting effects.



Right: This electric heater with chromium plated reflector was easily converted into the efficient spotlight described here.

Below: The completed spot as it appeared before the removal of the base. Because of its parabolic reflector no lens is needed.





Left: Two similar shots, the first of which was made by using a photoflood in a reflector for the illumination. In the second shot the figure was lighted with the spotlight. Note the increased contrast and sharper shadow outline.

hardware store for about $2.50, and assembled the stand in about an hour.

30″—¾″ black pipe threaded both ends
30″—⅜″ black pipe threaded one end
36″—⅛″ black pipe not threaded
12″—5/16″ black iron rod
6 —7″ x ¾″ nipples (black pipe)
4 —¾″ elbows (not galvanized)
3 —¾″ T joints (not galvanized)
1 —¾″ to ½″ reducer (not gal.)
1 —⅜″ to ¼″ reducer (not gal.)
2 —¼″ thumb screws
1 —electric switch
1 —¼ pint can black paint (self leveling kind)

In addition to these materials, four wooden casters 1¾″ in diameter were located in the basement junkbox, and a length of 1″ oak dowel was also found.

The 7″ nipples and the T joints were assembled to form an H. The elbows were fitted to the open ends of the H, and the 30″ piece of ¾″ pipe was fitted to the T joint in the middle of the H. The unthreaded end of the ⅜″ pipe was then expanded with several blows from a hammer, the threaded end being protected by being placed against a 2 x 4 pine block. The ⅛″ pipe was expanded on one end in the same manner. Then the reducers were drilled with a No. 7 drill (slightly smaller than ¼″), at right angles to the pipe bore, and close to the smaller end. These holes were threaded by using a ¼″—20 tap, and the thumb screws were inserted.

The expanded end of the ⅜″ pipe was next inserted into the ¾″ pipe to which the ¾″—½″ reducer was fitted. Before assembling the ⅛″ pipe to the stand, cut a 3″ or 4″ length from the unexpanded end, and save the short piece for the low-angle socket. Next, the unexpanded end of the long piece, and one end of the short piece should be reamed out with a 5/16″ reamer. The long ⅛″ pipe is then fitted to the rest of the stand in the same manner as the ⅜″ pipe.

Using an R drill (slightly less than ⅜″ dia.), a hole is bored into the top of one of the T joints on the base of the stand. The hole is drilled vertically, and is placed at the junction of the two axes of the T. This hole is then threaded with a ⅛″ pipe tap. The unreamed end of the short piece of ⅛″ pipe is then threaded with a ⅛″ pipe die, and the pipe is screwed into the T to form the low-angle socket.

The casters are added to the base after plugging the open ends of the elbows with pieces of the 1″ dowel which are drilled to take the caster posts.

To fit the reflector to the stand, a hacksaw was used to cut off the cast iron base at the top of its hollow portion. The main part of the base was thrown away, and a center punch used to make indentations around the bolt hole in the remaining lug. Similar indentations were made in the tin bracket on the back of the reflector, so that there would be added friction between the bracket and the lug for supporting the lamp at any angle. To one side of, and at right angles to the original bolt hole in the lug, another hole was drilled with an F drill (between ¼″ and 5/16″ dia.), and was threaded with a 5/16″—18 tap. The rough edges were then rounded off with a file, and the lug was screwed to one end of the 5/16″ rod which had been threaded with a 5/16″—18 die. The rod was then bent to form a gooseneck which would give the reflector freedom to swing vertically, and the remaining end was slightly tapered with a file to fit into the reamed ends of either of the two pieces of ⅛″ pipe.

A push-button switch was placed in the cord of the spotlight and to prevent wear and tear at the socket, the cord was secured to the gooseneck with friction tape. Two coats of black paint were applied to the finished stand.

When a No. 1 Photoflood is used, the light source is pretty well centered at the focal point of the parabolic reflector, and a concentrated beam of light is thrown for quite a distance. Consequently, no focusing arrangement is needed in this spotlight. Because the beam of light is so intense, I was interested in knowing how strong it really was, so I took my Weston meter and a white card and made several readings. With a new No. 1 Photoflood, the meter read over 1000 at 2 ft., 400 at 5 ft., 65 at 10 ft., and 20 at 20 ft.

With its intense and evenly graded illumination, this homemade spotlight has been a great aid in the making of interior portraits and still-life setups—⚑

A Foot Switch for Your Enlarger

by George R. Beck

A VERY efficient foot switch for use with the enlarger can be assembled by any amateur who prefers "to make his own" at a cost of one dollar or less. The writer's investment was ninety-five cents.

The materials needed are as follows: one block of wood 2″ in diameter and 5″ x 5″ square, one Ford starter switch (floor-board type), two 10 ft. lengths of rubber-covered extenson cord, one electric pin plug, one socket plug, and two 3/16″ stove bolts. The switch can be purchased at any Ford Agency and the other material at the five and ten cent store.

First prepare the block or base by finding and marking the center. Bore a one inch hole through the block at the center and run the plunger of the switch through this hole. With the switch held in this position draw its outline on the bottom of the block and remove switch.

Remove all stock within the lines just scribed by boring several holes with a 1″ bit to a depth of 1⅛″, and then clear the remaining stock with a chisel. Insert switch and try for clearance. The terminal poles must clear the bottom surface of the block. If necessary about ¼″ can be cut from the poles with a hack saw.

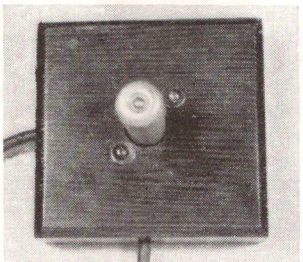
After making sure that the switch fits in the recess properly the two holes in the switch plate can be marked and the block drilled with a 3/16″ bit. At the same time a ⅜″ hole should be drilled through the block on two sides for the electric cords.

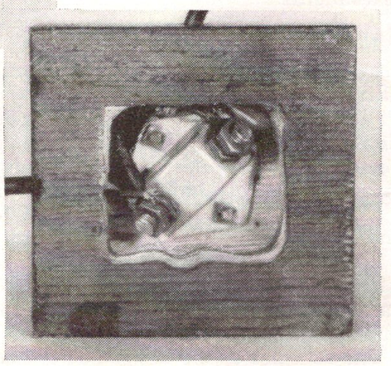
The block is now ready for the installation of the switch but before inserting the switch it will be well worth the time it takes to sand the block thoroughly and run a slight bevel around the edges of the top. The bevel should be cut with a plane but if this tool is not available the edges can be rounded with sandpaper.

The switch can now be inserted in the recess and bolted with two 3/16″ stove bolts. It is then ready for wiring. Run one end of each cord through the ⅜″ holes and connect one wire from each cord to each of the two switch terminals. Splice together, solder, and tape the remaining two wires. At the end of the cord going to the enlarger attach a socket plug and to the end of the other cord a pin plug and the switch is ready for use.

If desired the switch can be mounted on top of the block instead of underneath as described. The method outlined is preferable because it brings the top of the plunger closer to the floor.

A coat of oil stain and two coats of shellac will give the switch a finished appearance. Be sure that each coat dries thoroughly before applying the next. By rubbing the second coat of shellac with steel wool after it has dried hard the velvet smooth finish will give the switch a pleasing appearance. ⚑

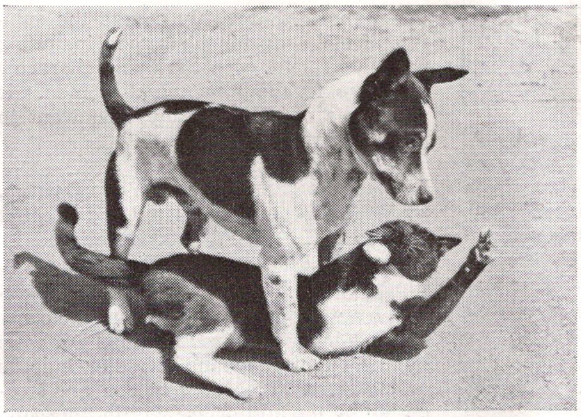




The illustrations show a top and bottom view of the finished foot switch. Note how the bottom of the block is hollowed out to accommodate the starter switch.

Dust Bag for Small Cameras

A REFRIGERATOR vegetable bag, made of an oiled silk material with a zipper opening is ideal as a camera case in dusty sections of the country. These bags can be bought for less than a dollar and will protect your miniature camera. —*Larry J. Fisher, Beaumont, Tex.*



Mrs. H. Nestler, Oakland, Calif., records a friendly bout with her Rolleiflex camera. The shot was made in bright sunlight, 1/300 sec. at *f* 8 on S. S. Pan film.

Pictures From Our Readers

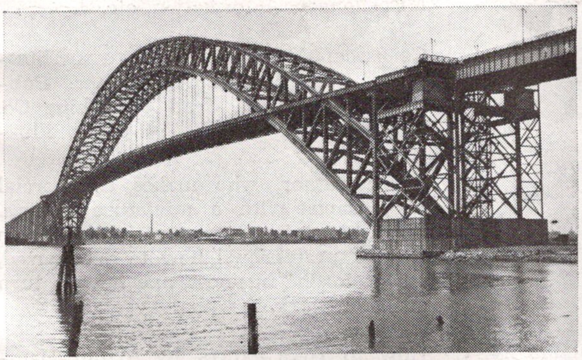
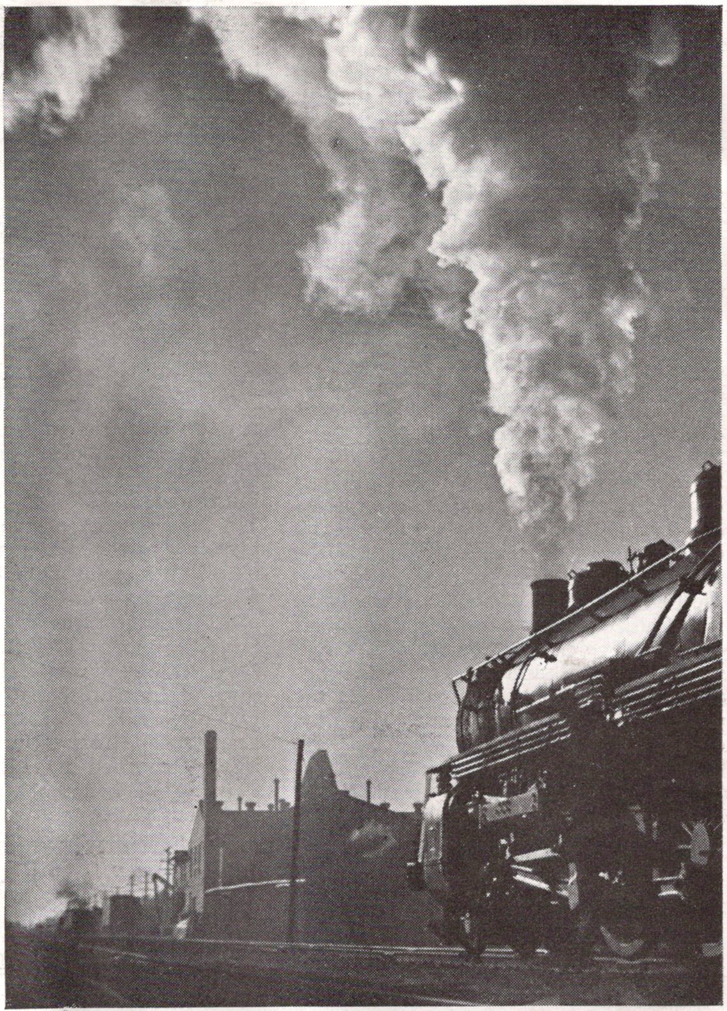
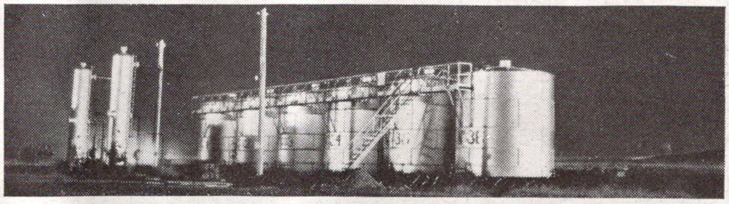


Photo taken by Fred W. Krech, Bayonne, N. J., with a Kodak Senior Six-20 and K-2 (yellow) filter. The exposure was 1/25 second at *f* 8 on Multichrome film.

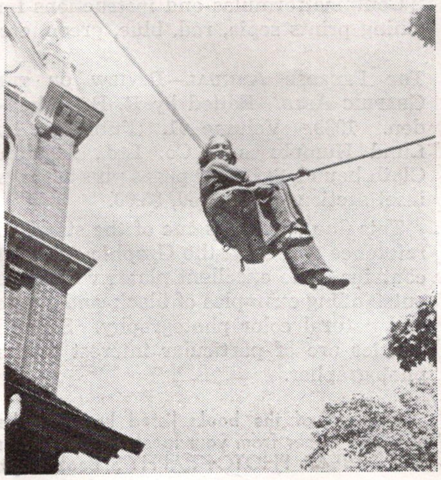


Star for the best photograph this month is awarded to Claude Skeels of Storm Lake, Ia., for his picture made with a 2¼x2¼ Voigtlander Brilliant camera after only fours months' experience. The exposure was 1/100 second at *f* 5.6 on panchromatic film using a K-2 (yellow) filter.

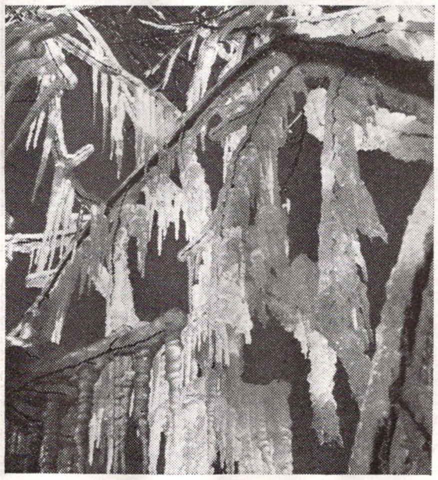


Unusual night picture by B. Martin, Royalties, Alberta, taken with a Kodak 3A on S. S. Pan film. The exposure was 3 minutes at *f* 16. Tanks were illuminated by the light of nearby gas flares.

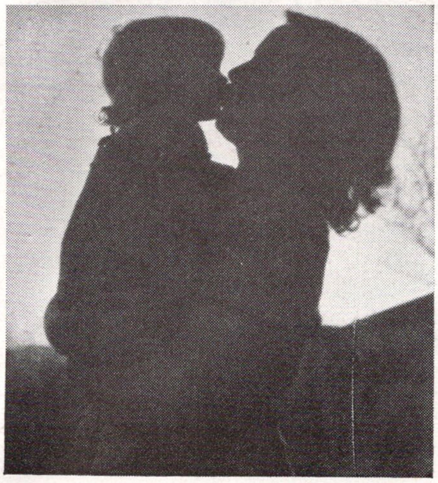
"Steeple-Jack's Girl Friend" by Pastor H. Schaller, Tomah, Wis. Made with Argus A camera, 1/200 sec., *f* 11 on Agfa Supreme.



Winter shot made with a Rolleicord by Viggo Dahl, Barre, Vt. It was taken on Eastman Super-XX film, 1/100 sec. at *f* 11.



J. Melvin Hunter, Portsmouth, O., took this with a Foth Derby and yellow filter, 1/50 sec. at *f* 3.5 on Agfa Plenachrome.



Newton's Rings

ONE of the trials and tribulations that may someday overtake the amateur photographer while making enlargements is the result of a famous optical phenomenon. At times when working with negatives held between glass cover plates it will be noticed that the prints show areas covered with a tracery of alternating light and dark lines, in various patterns, sometimes suggestive of the whorls of a fingerprint. This is due to the interference of the light rays passing through the thin air films between the negative and the glass pressure plates. The famous physicist, Sir Isaac Newton, was the first to study this phenomenon which is now designated as "Newton's Rings."

There are several ways of eliminating these annoying lines, one of which, of course, is to omit the pressure plates. Another method is to place a drop of clear glycerine on each glass plate before putting the negative in position so that there is a layer of glycerine between the plate and the negative. A still easier way and one that is equally effective is to introduce a piece of thin paper between one edge of the negative and the plate nearest the light source. This produces just enough angularity between the glass surfaces to prevent the rings appearing.—*Davidge H. Rowland, Baltimore, Md.*

NEW BOOKS

Photography for Fun and Money, by A. Frederick Collins. Published by D. Appleton-Century Co., New York. Cloth bound, 5½x8, 392 pages, illustrated, $3.00.

A comprehensive guide to the art and science of the camera which covers the whole subject from A to Z in a clear and understandable style. The book is well organized and concisely written.

The Camera Eye—Where to See and How to Take Good Pictures, by Leo Nejelski, with an introduction by Valentino Sarra. Published by Knight Publishers, Inc., New York. Cloth bound, 6½x9, 104 pages, illustrated, $1.50.

A brief treatise on the subject of photography to acquaint the serious camera user with some of the potentialities of his miniature camera. Photographic principles so discussed as to apply to users of larger cameras as well. Primary emphasis, however, is upon the *seeing* of pictures and picture possibilities.

Photographic Make-Up, by Wray Meltmar. Published by Pitman Publishing Corp. Cloth bound, 6½x9, 218 pages, illustrated, $3.50.

This book thoroughly covers the subject of make-up for the camera, including partial, straight, corrective, and character make-up for both men and women. It should be of value to any who want to produce better portraits.

Lifelike Portraiture with Your Camera, by W. H. Doering, translated and adapted by Leo A. Leigh, F.R.P.S. Published by American Photographic Publishing Co. Cloth, 6x8½, 112 pages, illustrated, $2.00.

The author of this book shows the camera owner how to produce good portraits by the simplest means, whether indoors or outdoors. Whatever means are suggested by the author are within the scope of the amateur portraitist.

How to Take Pictures at Night, by M. U. Wallach. Published by Knight Publishers, Inc. Paper, spiral bound, 6⅜x8, 62 pages, 75c.

The science and art of photography at night, indoors and outdoors; information on technique, tricks, and equipment.

The British Journal Photographic Almanac—1939, edited by Arthur J. Dalladay. Published by Henry Greenwood & Co., Ltd., London. Paper bound, $1.25; cloth bound, $1.75; 4¾x7¼, 740 pages, illustrated.

The 1939 edition of this famous yearbook of photography contains splendid articles on photographic subjects in addition to all the regular features—Illustrations, Epitome of Progress, New Goods, Formulas, Tables, Color Photography, Miscellaneous Information, etc.

Commercial Photography with the Miniature Camera, by C. A. Goldner. Published by Camera Craft Publishing Co. Paper bound, 5¼x7½, 96 pages, illustrated, $1.00.

The author, who makes commercial photographs with a miniature camera, tells the serious amateur interested in turning professional how to get started, where to find business, and how to turn out good work.

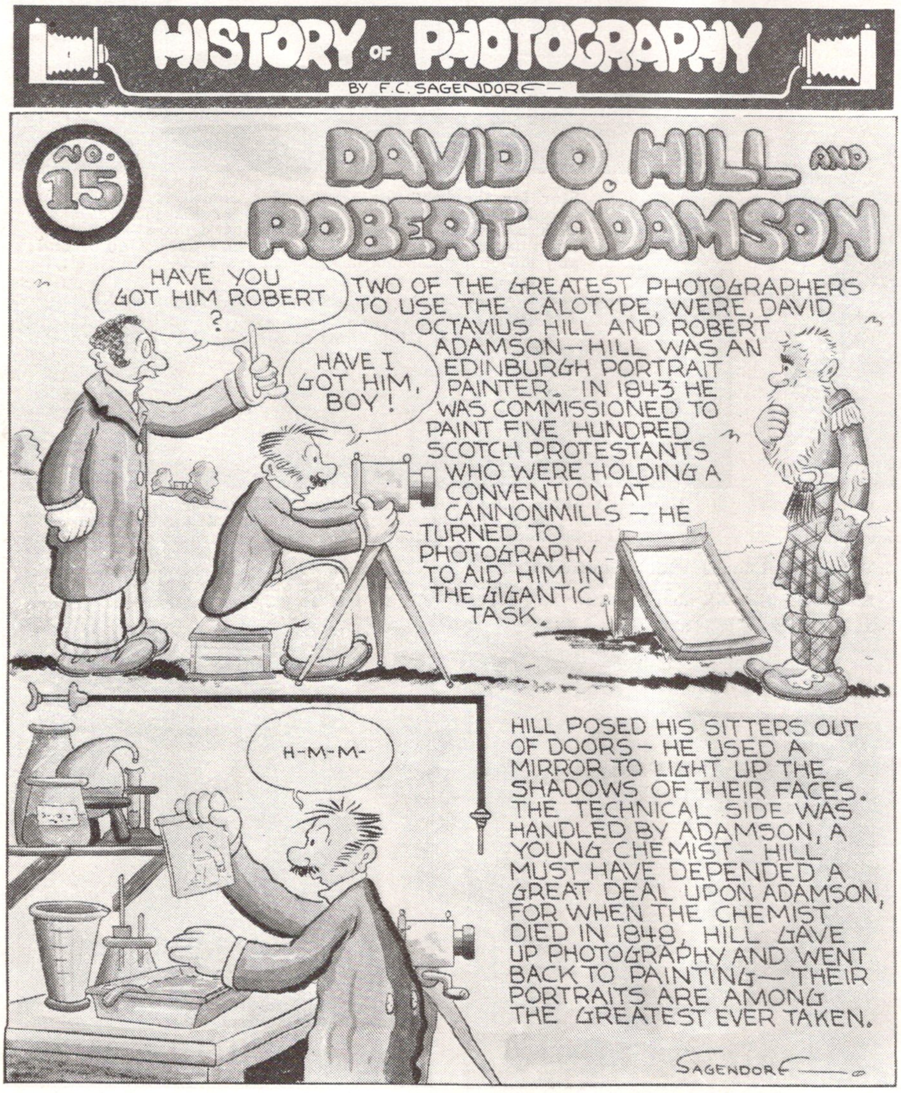
How to Tone Prints, by Arthur Hammond, F.R.P.S. No. 14 Practical Photography Series, American Photographic Publishing Co. Paper cover, 5¼x7½, 72 pages, 4 plates.

Contains formulas and instructions for toning prints sepia, red, blue, green, etc.

The Penrose Annual—Review of the Graphic Arts. Edited by R. B. Fishenden. 1939. Volume 41. Published by Lund Humphries & Co. Ltd., London. Cloth bound, 8x11, 180 pages plus 56-page inset section, illustrated, $5.00.

This fine volume is one of the standard reference works on the Graphic Arts. It contains some excellent plates which are outstanding examples of black-and-white and natural color photography. Several articles are of particular interest to the photographer.

Any one of the books listed here can be obtained either from your local camera dealer or POPULAR PHOTOGRAPHY'S Book Dept.


HISTORY of PHOTOGRAPHY
BY F.C. SAGENDORF—
NO. 15
DAVID O. HILL AND ROBERT ADAMSON
HAVE YOU GOT HIM ROBERT ?
HAVE I GOT HIM, BOY !
TWO OF THE GREATEST PHOTOGRAPHERS TO USE THE CALOTYPE, WERE, DAVID OCTAVIUS HILL AND ROBERT ADAMSON—HILL WAS AN EDINBURGH PORTRAIT PAINTER. IN 1843 HE WAS COMMISSIONED TO PAINT FIVE HUNDRED SCOTCH PROTESTANTS WHO WERE HOLDING A CONVENTION AT CANNONMILLS — HE TURNED TO PHOTOGRAPHY TO AID HIM IN THE GIGANTIC TASK.
H-M-M-
HILL POSED HIS SITTERS OUT OF DOORS— HE USED A MIRROR TO LIGHT UP THE SHADOWS OF THEIR FACES. THE TECHNICAL SIDE WAS HANDLED BY ADAMSON, A YOUNG CHEMIST— HILL MUST HAVE DEPENDED A GREAT DEAL UPON ADAMSON, FOR WHEN THE CHEMIST DIED IN 1848, HILL GAVE UP PHOTOGRAPHY AND WENT BACK TO PAINTING— THEIR PORTRAITS ARE AMONG THE GREATEST EVER TAKEN.
SAGENDORF

Print Criticisms

This service is free to our readers. Send your prints with technical data to POPULAR PHOTOGRAPHY, 608 S. Dearborn St., Chicago, Ill. Prints will not be returned.

R. L., North Bend, Wash.—Frequently, a low light source, such as you have used for your dominant lighting here, can do much toward lending dramatic qualities to a portrait. In this case, however, the main effect has been an unpleasant exaggeration of your subject's jaw and chin contours. There has also resulted a rather muddy facial flesh tone which is emphasized by the white background. As a rule a neutral or dark background is best for portraits of men. With the exception of the white collar and the background, the lightest area in this print is along your subject's jaw-line. In most portraits it is well not to make your tonal contrasts too severe or too sharply defined between facial areas. In this case we recommend a brighter and more even lighting, together with a background of somewhat darker tone. Also, a fairly weak light source above the subject would bring out desirable texture in the hair. The accompanying sketch will illustrate one lighting setup which might have been used here.

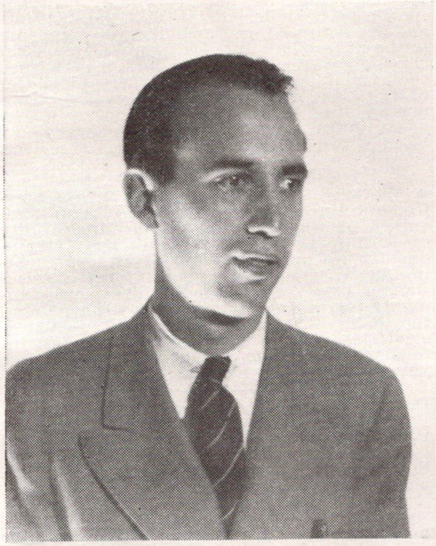
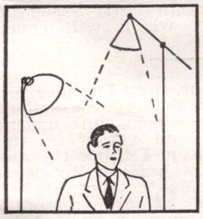


Photo by R.L.



Left: Sketch showing better lighting setup for this particular pose and subject.

* * *

H. R. P., Wycombe, Pa.—It is interesting to see what amateurs are doing in aerial photography. This shot has much to recommend it. The shutter speed of 1/200 second seems to have been sufficiently fast to prevent any blur, since in your original 8 x 10 glossy print small details may be discerned. We cannot help feeling that even more detail would have been shown were there not some loss of definition due to grain in the negative. This, in turn, we believe to have resulted largely from your negative having been overexposed to some degree. Veteran aerial photographers find that there is often a tendency toward overexposure in aerial work, due to the difference in lighting conditions from those encountered in everyday photography. And grain tends to become more noticeable with overexposure, especially in the case of ultra-rapid miniature camera films when big enlargements are made. Your picture is well composed.

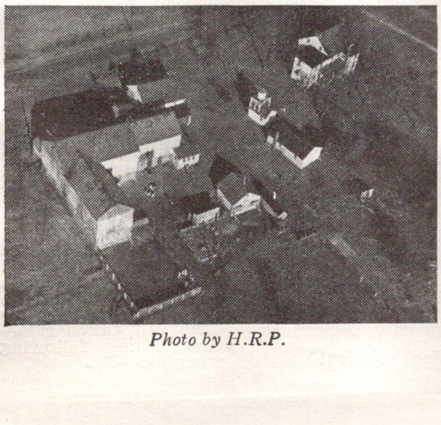


Photo by H.R.P.

* * *

J. P., Yonkers, N. Y.—The good compositional features of your print are offset to a large degree by the effects of the camera angle you chose. Low camera angles can produce some striking pictures, to be sure, but their use must be judicious and well planned with an eye to exactly how the final result is going to look. The distortion resulting from the camera position here is especially noticeable because of the comparatively light tone of the subject's riding trousers. To sum it up, the combination of a lens of short focal length, plus a camera position which is low and fairly close to the subject, has resulted in an exaggerated prominence of the lower portion of your subject. It follows naturally that the face, which should get at least a fair share of prominence, must compete with the rest of the picture for attention. A filter might have improved the tonal quality of the sky, even though the day was partly cloudy and the sunlight weak.

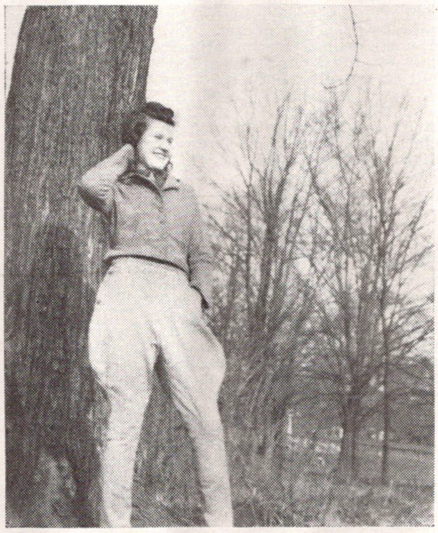


Photo by J.P.

* * *

M. A. E., Outremont, Que.—Almost the first thing which meets the eye in this portrait is the manner in which the drapes form a distracting vertical pattern. These rather severe vertical lines in back of the subject very definitely divert attention, which, in portraiture, should be concentrated upon the subject alone. You might have prevented this easily by arranging the drapes so that they did not fall in deep folds, or by choosing a simple background to begin with. Especially you should have avoided the isolated light area above the subject's head, which divides your print exactly in the middle. Expression and pose are good, and the model herself has been well lighted, generally. Facial lighting might have been in a somewhat higher key, since in your original print the flesh tones tend to be slightly grayish or muddy. Also, you should have placed your two lights so as to get rid of the slight shadows which fall on either side of the nose. The hair lacks texture and might have profited by a little toplighting.

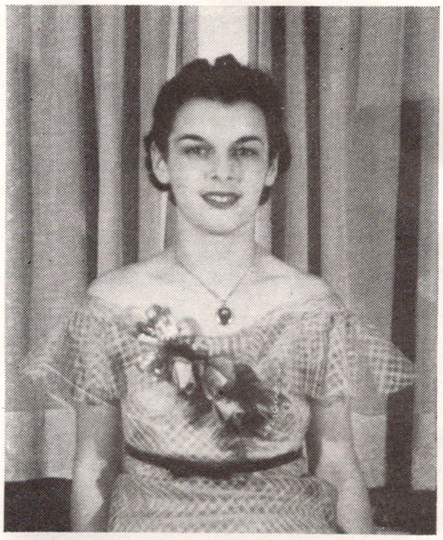


Photo by M.A.E.

* * *

P. A. D., Brooklyn, N. Y.—Famous landmarks, as well as other architectural subjects are a constant challenge to the photographer who has an honest desire to make pictures rather than snapshots. The print reproduced herewith represents an attempt at unusual treatment of a famous bridge. We feel that in this instance the tree and the bridge tower are too nearly equal in image size and attention value (also being too nearly centered on the print). As a result of this equality, neither subject succeeds wholly in capturing the attention. While the eye first finds attention within the picture it is soon led out by one of the several tree branches or horizontally by the bridge. Frankly, there is not much to be said for the composition for this reason, and while there is good contrast between the tree and the bridge the two are in pretty much of a tangle. The vertical masses (tree and bridge tower) are too nearly superimposed, and unquestionably the heavy horizontal line formed by the bridge itself divides the picture too severely.

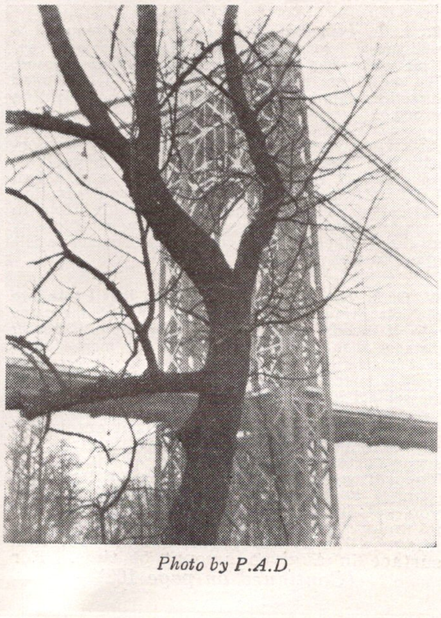


Photo by P.A.D

Questions & Answers

C. M. K., Atlanta, Ga. When copying a black-and-white print, what is the best type of film to use? I have been using supersensitive pan film for this purpose, but felt that perhaps the wide color sensitivity of pan film might not be so desirable here.

ANSWER: The slower panchromatic emulsions can be used effectively for copy work, due to their generally high contrast and fine grain properties. Many workers prefer orthochromatic or the somewhat slow process films for this work. Fast pan material such as you have been using probably is least adapted to copying.

B. J. Tucson, Ariz. I have used red opaque in retouching some cut film negatives, and found that when I am ready to print some of the opaquing has chipped off. How might I prevent this?

ANSWER: A coating of high quality clear varnish will prevent the opaque from chipping or flaking off your negatives, and in addition will waterproof them.

J. D. D., San Francisco, Cal. When raw lights are used in portraiture, how can you eliminate chalky flesh tones?

ANSWER: By "raw" lights we assume you refer to uncovered bulbs, which are quite apt to produce harsh shadows and chalky flesh tones. Some method of diffusion is strongly recommended, such as screening your lights with tracing paper or silk, or employing the clamp-on metal diffusion discs now being sold by most dealers. By diffusing your portrait lighting sources you can soften shadows and produce desirable facial texture and modeling. Accurate exposure also can help prevent the blocked-up negative areas which produce the lifeless whites you wish to avoid.

J. W. H., Green Bay, Wis. Have you ever heard of any photographic rule concerning the mixing of acid with water?

ANSWER: Sound laboratory practice demands that you *always add the acid to the water;* never pour water into or onto acid. This is because certain acids have a tendency to explode in some degree when water is added to them.

Miss J. C., New York City. Is it necessary to fix prints AFTER toning them, when they have already been fixed in the usual manner after development in black and white?

ANSWER: A majority of toning processes do not require fixation after toning, and in many cases such procedure would be actually harmful. However, a *hardening* bath (such as may be made with potassium chrome alum, for example) is recommended, since most toners tend to swell and soften the emulsion, thereby rendering it easily marred or scratched.

B. J. T., Hannibal, Mo. I recently attempted a well-known intensification process with some negatives which had been rather badly underexposed. The results are not very good, although I followed directions carefully. Can you suggest what might be wrong?

ANSWER: Intensification is intended generally for use on *underdeveloped* negatives. In these it can increase density and detail by fortifying those areas of silver already deposited. The value of intensification in treating *underexposed* negatives is very slight indeed, there being no underdeveloped image to work.

W. O. R., New York, N. Y. Assume that I take two pictures of the same subject moving at the same rate of speed. One picture is taken from a greater distance than is the other. When the more distant shot is enlarged so that the subject is the same size as it is in the "closer-up" picture, which image of the subject will be the sharpest?

ANSWER: So many factors might enter into a problem like this that we will have to assume certain conditions in replying to you. Theoretically, assuming the same lens and camera are used in both cases, the farther *you get from a moving object the smaller* its image will be and the less distance the image will have to travel across your film surface in a given amount of time. For

(Continued on page 102)

Letters to the Editor

Dear Sir:

Regarding the book *Basic Photography:* when I read the first notice of this book in POPULAR PHOTOGRAPHY some time ago, I promptly enclosed 65 cents in an envelope and headed it for Washington, D. C. In due time the book came back. It contains more real information than other books I have costing three times as much; furthermore I received with the book a list of publications issued by the Government Printing Office covering a wide range of subjects . . . I ordered nearly ten dollars worth myself, to start with. The Superintendent of Documents will send a list of publications weekly to anyone who asks to have his name placed on the mailing list.

FRED L. BLAISDELL
Oak Grove, Oregon

- Glad you liked the book.—ED.

Dear Sir:

Having just read the February issue of POPULAR PHOTOGRAPHY, I should like to take this opportunity of congratulating you as publisher and Mr. J. W. McManigal as author of the article *Laments of a Free-lance* — undoubtedly the most illustrative story of the many woes besieging the free-lance that I have ever read. . . .

As a solution to the problem of having one's throat cut one day and being driven to ecstasy the next, I recommend that the free-lance become a member of an established photo syndicate or guild. . . . By this method financial remuneration will be governed on a businesslike basis. Of course the photographer pays for this "security" but it is well worth it.

E. S. SEABURY
Boonton, N. J.

- You will be interested in the article by Chapman Turner on page 38 which gives a picture editor's advice to the free-lance.—ED.

Dear Sir:

. . . It is indeed pleasing to know what the photographers of this country are doing and I hope you continue to keep us informed. . . . I do not dispute the fact that foreign intelligence has played an important role in photography. The foreign knowledge and the foreign wisdom of applying photography, I highly respect. But please continue as you have been doing—keep us informed about the photographers of this country. Let us see their pictures.

R. H. MINNERLY
White Plains, N. Y.

- Your point is well taken though we feel that there should be no national boundaries drawn around photography. The art is international in scope and the greatest benefits are to be derived from a knowledge of the best that is done, regardless of *where* it is done.—ED.

Dear Sir:

I have been a constant reader of POPULAR PHOTOGRAPHY ever since its inception, and am writing to find out whether or not there would be available a special service for readers as far as criticism of prints is concerned. Under *Print Criticisms* prints are not returned and criticism only appears in the magazine. If there would be a special service for the use of readers who wished their prints returned with a personal letter of criticism, they would gladly pay return postage and even a fee on top of it. A great many amateur photographers would be glad to take advantage of such a service.

H. E. SWAN
Beowawe, Nevada

- We wish that we could offer such a service, but the enormous amount of detail involved places it beyond the physical ability of a staff even larger than ours. Consequently we must limit ourselves to presenting in regular departmental form a selection of prints embodying faults most commonly made by amateurs. If you will read the *Print Criticisms* department regularly each month you will certainly find much information of value which can be applied to your own picture making.—ED.

Dear Sir:

. . . I have been a reader of POPULAR PHOTOGRAPHY ever since the first issue and I like it very much. But I never see anything on my branch of photography, i.e., photographing railway trains. . . .

NICHOLAS BANCHICH, Jr.
Port Clinton, Ohio

- We are glad to inform you that we have an article planned for an early issue of POPULAR PHOTOGRAPHY which will cover your hobby.—ED.

Dear Sir:

As an humble amateur, may I tender my sincere compliments towards your excellent magazine? . . . I have been an ardent reader for some time, and out of all the superb photos I have seen, I think the one that stirred me most was *Music* by Karl Oeser [Picture of the Month, Sept., 1938]. The peaceful, spiritual atmosphere of a church, the power of emotion implied by music, and the dynamic personality behind the presentation, all combine to form the very quintessence of photographic art and beauty. . . .

However, before I finish I must mention this. At the present I am engaged upon the construction of my own camera, a project that few amateurs—to my knowledge—ever give a thought to. Why, I don't know, as it's not half so difficult as one might imagine. . . .

JOHN C. WILLIAMS
London, England

- We have had a great many compliments on Karl Oeser's picture and are glad to add your comments to those already received. Here's wishing you success with your camera.—ED.

Dear Sir:

Being a resident of Niagara Falls, I was keenly interested in the view of the wreckage of the Falls View Bridge [p. 35, Feb., 1939] . . . I mean the part about taking the picture a few minutes after the crash. . . . There was no sun to speak of when the crash occurred, at least it was hazy. Furthermore the sun was low in the west, as it was after four in the afternoon. The shadows show the picture was taken about eleven in the morning.

CHARLES ALSWORTH, Jr.
Niagara Falls, N. Y.

- Looks as though you have us there. The picture was undoubtedly taken sometime the following morning.—ED.

MILT KOSTIN

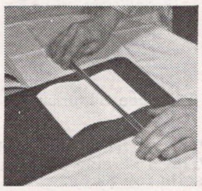
"For the last time, you can't use the 'reducing' solution!"

New Tricks FOR CAMERA OWNERS...

A monthly list of valuable kinks and hints for the amateur
POPULAR PHOTOGRAPHY will pay $3.00 for each one accepted

Print Straightener

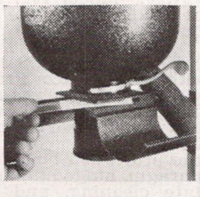
A SIMPLE and efficient print straightener may be had by buying a sponge rubber kneeling pad at the dime store, then cutting a length of round iron curtain rod to use as a roller.



Rolling print with iron rod.

The curled print is placed face down on the pad and the rod rolled back and forth over the print, exerting just enough pressure to straighten the print. A short length of 1" dowel or piece of an old broomstick may be used as a roller in place of the iron rod. Prints may be straightened permanently this way, and by exerting enough pressure a backward curl may be given the prints.—*George Carlson, Chicago, Ill.*

Clean Your Condenser Lens



Cleaning the lens.

LET me tell you about a simple gadget to remove the dust from the condenser lens without pulling your enlarger apart and removing the condenser unit. A strip of lens tissue wound around one end of a thin cardboard strip 1"x5" is all you need. With the film carrier removed and the enlarger light on, the lens tissue may be passed over the pressure surface of the condenser lens removing all dust. The projector lens may be removed while using the tissue to prevent dust falling on it from above. —*Chas. W. Colburn, Rochester, N. Y.*

Recording Exposure

Record card mounted on back of camera.

THE recording of exposure time, diaphragm setting, filter used, etc. of every photograph taken has always been a bugbear to most amateur photographers—not because of the work involved but because of the inconvenience. Numerous record booklets are available, but they are usually discarded as a camera accessory which is in the way when not in use and not at hand when most needed.

This whole problem has been solved by a very simple method. Take a small piece of cardboard the approximate thickness of a 1-cent postcard, the size depending on the size of the camera (2¼x3 for the average 6x6 cm. twin lens reflex) and mount it on the rear of the camera with four print mounting corners. As the exposures are made the data can quickly be recorded. When the roll has been exposed the card is removed and a new one inserted for the next roll. The filled card can either be filed with the negatives or else the data copied onto a suitable record sheet for permanent filing. Increased strength and prolonged keeping qualities of the corners can be obtained by giving them a coating of Duco household cement. Standard 3x5 filing cards, cut to fit camera, serve nicely for the notes.—*Lt. Oscar H. Stroh, Linglestown, Pa.*

Film Pack Holders Supply Ferrotype Plates

Handy print tins.

I MADE a habit of saving all my used film pack holders because I was sure they could be used for other purposes. I have found at least one use for them that I'd like to pass on to other film pack users. The shiny black metal plate, used as a seal against the light after all the films are exposed, can be polished and used effectively as a ferrotype plate. They come in quite handy when all the regular plates are in use.—*William Swallow, Brooklyn, N. Y.*

Keeping Developer

Bottled developer.

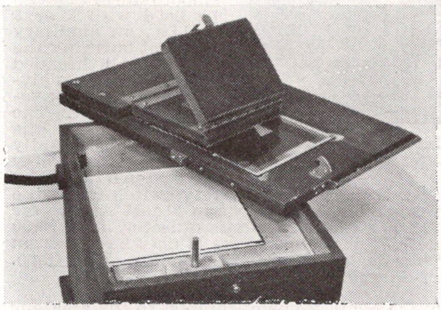
WHEN some developers are stored in large gallon containers they deteriorate rapidly as the liquid is used and the air space becomes greater. A mighty convenient way to obviate this difficulty is to store the developer in standard 12-ounce catsup bottles. The developer thus stored will keep for long periods of time and measured quantities are at any time available. If you use more than one kind of developer be sure to label the bottles so you won't have to remember which is which. —*William L. Hunter, Ames, Iowa.*

Perfect Focusing Magnifier

HERE is the perfect magnifier for groundglass focusing, particularly with a reflex camera. It is one of those thick plano-concave lenses sold for map reading and postage stamp examination, and used flat on the paper. Inside the hood of the reflex it rests flat on the top of the groundglass, revealing the finest detail over a large portion of the image.—*J. Powell Williams, Melbourne, Australia.*

Control in Contact Printing

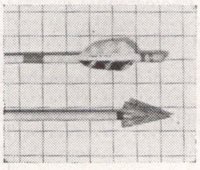
AN improvement on most amateur printing machines is the installation of an opal glass screen about one inch below the glass which supports negative and paper. Such a screen will insure a more even intensity of light reaching the negative and will usually result in an improvement of print quality. In addition, the screen makes possible a practical method of control in contact printing; that is, shading thin portions of a negative. To do this the negative is placed in position on the printer and the area to be shaded during the printing is traced with pencil on a piece of tissue or tracing paper. The latter is then cut out following the pencil outline and the resulting piece of tissue placed on the opal glass screen directly under the corresponding portion of the negative. More than one thickness of tissue may be required to hold back very thin areas.



Opal glass screen in contact printer.

The opal glass should be a little larger than the top glass of the printer. It is supported on a frame of stiff cardboard, which in turn rests on little cleats fastened with brads to the inner sides of the printer. The cardboard frame cuts off practically all light except that passing through the opal glass. For a small printer revamped in this manner a 60-watt lamp will be found just about right for printing all but extremely dense negatives.—*E. R. Augustin, Jr., Livingston, Mont.*

Ruled Background Shows Size in Record Photographs

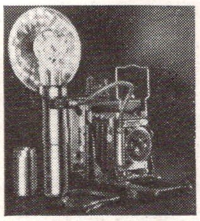


Squares indicate object size.

BEING called upon to photograph some specimens for a nature club not long ago, I ran up against the problem of having to show the size of different objects without adding distracting objects to the pictures, such as hands, match boxes, pencils, etc. They insisted upon plain backgrounds and very scientific-looking prints. After some experimenting a background of white paper with lines ruled in squares an inch apart for small articles and larger squares for larger articles was found to fill the bill perfectly. By marking the size of the squares in the lower corner of the picture, the size of the object could be told at once without spoiling the picture in the least.—*T. H. Taylor, Seattle, Wash.*

Trade Notes and News Items

THE FIRST of the new Speedguns announced by the newly formed Speedgun Corporation of America is the Model A designed for use with Speed Graphics and, by a change of bracket, all cameras having a U-front. The battery case is made of satin finished smooth dural and can be used with 2 or 3 cells, an auxiliary segment carrying the 3rd cell. All threaded connections have given way to the bayonet-type catches. The case attaches to the camera horizontally so that camera may be supported by Speedgun. A special safety switch forms the release button. Speedgun Model A sells for $18.00 with 5″ aplanatic reflector, and $19.50 with 7″ reflector. Details may be had from your dealer or by writing to Speedgun Corp. of America, Bloomfield, N. J.


Model A on Graphic.

TWO NEW items of interest to the amateur are announced by Kelley Photo Supply Co., 326 N. Michigan Ave., Chicago, Ill. One is a set of die-cut contact printing and enlarging masks for negatives 1x1 to 3¼x4¼ and including circle, oval, etc. Kel-mask set of 16 pieces sells for 25c. The other item is a new safelight, Kel-lite, complete at $1.25 with 4 interchangeable and unbreakable colored-plastic discs for use in contact printing, enlarging, and developing ortho or pan film. Uses 10-watt bulb obtainable anywhere.

RECENTLY announced is the Raygram Negative Processing Kit for fine grain development of negatives. It consists of Ray-Del, a fine grain developer, Ray-Stop, a hardening short-stop, and Ray-Fix, a fixing bath. All three products are in powder form and put up in handy double compartment containers complete with instructions and time-and-temperature chart. Kit sells for $1.50. Write for literature A-7 to Raygram Corporation, 425 Fourth Ave., N. Y. C.

A SPECIALIZED Perutz emulsion called Perutz Graphic Film B is announced by Intercontinental Marketing Corp., 8 W. 40th St., New York City. This miniature camera film is especially designed for reproduction purposes and copy work. It has a very thin layer of emulsion, ultra fine grain, antihalation, and sensitivity approximately 2-3 degrees Scheiner. The new film is available in cans containing 17 ft. of unnotched 35 mm film. List price $1.50 each can.

KITS consisting of a universal assortment of 4 Omag-Swiss solid optical glass filters are available for movie cameras. Included is a yellow, green, and red filter in addition to a haze filter for use with Kodachrome. The mount is of the sunshade type and screws directly into the lens barrel. These kits are available for all *f* 3.5, *f* 2.7, and *f* 1.5 Wollensak lenses, and for the *f* 2.5 Taylor-Hobson lens. List price of the complete kit is $4.50. Information from your local dealers or from Chess-United Co., Emmet Building, Madison Ave. at 29th St., New York City.

PRECISE measurement of light for projection printing and for balancing color separation negatives can be had with the new Protyme Photoelectric Photometer. Features promoting this accuracy are its 100% voltage regulator, illuminated meter, and an "eye" having an area of under ¼ sq. in. Price $17.50. Details can be had by writing J-P-M Mfg. Co., 3022 N. 34th St., Milwaukee, Wis.

A NEW line of Kino Photographic Accessories is announced by The Thalhammer Company, makers of Talhammer tripods. All of these items are fully described and illustrated in the new 1939 catalog which may be had on request. Write to The Thalhammer Co., 1015 W. Second St., Los Angeles, Calif.

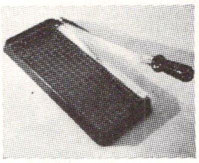
KODAK Panatomic-X Film, introduced a few months ago by Eastman Kodak Co. for 35 mm cameras, is now available in a wide range of roll film and film pack sizes.

ANNOUNCEMENT is made of the new Kains Agitator, an electrically operated turntable of stainless steel and sufficiently large to take the standard size film tanks now on the market. The turntable is set at an off-angle to gravitate the developer or hypo toward the low side, and the film which is naturally arranged in a spiral works the solution screw fashion from the outside of the reel into the center. Tank and reel revolve at about 25 r.p.m. Being off level, the tank will require a smaller amount of solution when used with this agitator. Price, $7.50 plus postage. For further information write to Maurice Kains, 331 N. Bundy Drive, West Los Angeles, Calif.

Film agitator.

A NEW 52-page booklet of interest to users of 35 mm cameras has just been published by Agfa Ansco Corp. Titled *Selecting Your Miniature-Camera Film*, the booklet includes a wealth of information on the properties, uses, exposure, and processing of Agfa 35 mm films. Copies are available on written request to Agfa Ansco Corporation, Binghamton, N. Y.

A NEW print and paper trimmer is announced by Besbee Products Corp., Trenton, N. J. It is novel in design, the base being made from a practically unbreakable plastic. This base is clearly squared with white engraved lines to aid in trimming evenly. The print or paper is held flat by a smooth, transparent celluloid guide, and the cutting surfaces held to proper cutting tension by a spanner spring against the blade. The entire unit is light and readily portable. The 10″ size is ready for distribution and sells for $3.50.


Besbee trimmer.

RADICALLY new in design with exceptionally high optical efficiency, the new 500-watt, 8 mm movie projector announced by Universal Camera Corp. retails at $42.50 and incorporates many features which include full die-cast frame construction, forced draft cooling, variable speed control, pilot light socket, *f* 1.6, 1″ projection lens, and still picture projection. Complete information can be had from your dealer or from Universal Camera Corp., 30 West 23rd St., New York City.

CONSTRUCTED of heavy gauge rolled steel, the new Electromatic Print-O-Larger announced by The Benwin Company, 47 Bond St., Brooklyn, N. Y., will make enlargements up to 3½x5 from 35 mm and No. 127 negatives. It has a fixed focus, uses standard Photoflood bulb, and features an electric timer and switch registering from 1 to 60 seconds. Finished in black and silver the Model 101 with automatic timer sells for $24.50. Model 102, without timer, is priced at $13.50. Complete information sent on request.

NEW FEATURES have been incorporated into the Minaco Projector-Enlarger, a device which enlarges from all negatives 2¼x 2¼ or smaller and, when tilted to a horizontal position, serves as a projector for positive transparencies. Among its features are the projection bulb focusing device, iris diaphragm, hinged film slide and mask to facilitate cleaning, and double locking system which permits rapid movement of film through the housing without causing pres-

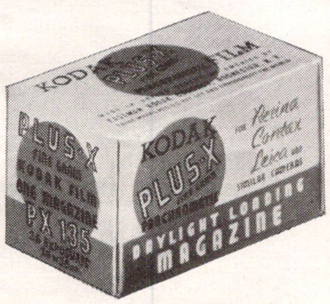
(*Continued on page 98*)

CALENDAR OF PHOTOGRAPHIC EXHIBITIONS

SALON	ADDRESS	ENTRY FEE	ENTRIES ALLOWED	CLOSING DATE	DATES OPEN TO THE PUBLIC
2nd Annual Rocky Mountain National Salon of Photography	R. F. Heckman, Sec., Denver Photographic Soc., 1429 Marion St., Denver, Colo				Chappell Hse. Mus. Apr. 3—Apr. 17
6th International Milwaukee Salon of Photography —Photo Pictorialists of Milwaukee	Roy E. Peterson, Salon Chairman, 772 N. Jefferson St., Milwaukee, Wis				Mil. Art Institute Mar. 17—Apr. 1
3rd Annual Fox River Valley Photographic Salon.	Salon Com., Green Bay Camera Club, Roy E. Scheils, Salon Dir., 1215 10th Ave., Green Bay, Wis				Mar. 15—Mar. 30
31st National Salon Scottish Photographic Federation	A. E. Clark White, 71 London Road, Kilmarnock, Scotland	$1.00	4		Apr. 8—Apr. 17
San Francisco International Salon of Pictorial Photography	California Camera Club, 45 Polk St., San Francisco, Calif	$1.00	4	Mar. 14	De Young Museum Apr. 2—Apr. 30
XVIII International Salon of Photography, Brussels, Belgium	F. L. Giesen, 106, rue Gerard, Brussels, Belgium	7 Belgas	4	Mar. 15	May to Oct.
1st Annual Salon of Photography, Lebanon Valley Camera Club, Lebanon, Pa	Secretary, Lebanon Valley Camera Club, Box 312, Lebanon, Pa	$1.00	4	Mar. 30	Apr. 8—Apr. 15
Annual Exhibition Birkenhead Photographic Association	F. L. B. Revis, 20 Bryanston Road, Prenton, Birkenhead, Cheshire, Eng	1s per print	6	Apr. 5	Apr. 24—Apr. 29
5th Blossom Festival Salon of Photography	W. H. Mitchell, 614 Broad St., St. Joseph, Mich.	$1.00	4	Apr. 19	May 7—May 15
3rd Annual National Photographic Salon for Women sponsored by Miniature Camera Club of Philadelphia	Mrs. Doris W. Heller, Salon Sec., Miniature Camera Club of Phila., Architects Bldg., Philadelphia, Pa.	$1.00	4	Apr. 20	May g—May 21
2nd National Memphis Salon of Photography, Memphis, Tenn	Memphis Salon of Photography, Brooks Memorial Art Gallery, Memphis, Tenn	$1.00	4	Apr. 24	June 1—June 30
4th Anthracite Photographic Salon, sponsored by Scranton Camera Club	Miss Elizabeth Taylor, Salon Dir., Everhart Museum, Scranton, Pa	$1.00	4	May 1	May 13—June 3
2nd Tri-State National Salon of Photography	Salon Committee, Burlington Camera Club, 216 Eisfeld Bldg., Burlington, Iowa	$1.00	4	May 8	Hotel Burlington May 22—May 28
8th Detroit International Salon of Photography	Secretary, Detroit Institute of Arts, Detroit, Mich	$1.00	4	May 17	June 6—June 30
6th Annual & 3rd International Salon—Marshall Field & Co	Marshall Field & Company, Camera Section, Chicago, Ill	50c	4	May 19	June 6—July 15
Newport Tercentenary First Annual Salon of Photography	J. L. Goodman, Salon Dir., Newport Camera Club, Y.M.C.A., Newport, R. I	$1.00	4	May 20	June 11—June 18

Any camera is a better camera

with the NEW KODAK FILMS


KODAK
PLUS-X
PX 135
DAYLIGHT LOADING MAGAZINE
for Retina Contax Leica and similar cameras

KODAK PLUS-X

This is the general all-purpose film for miniature cameras. It combines extra speed with fine-grain characteristics that permit generous enlargements even from negatives exposed under adverse light conditions. In miniature rolls and magazines.

KODAK
SUPER-XX
PANCHROMATIC
HIGH SPEED FILM
XX 135
DAYLIGHT LOADING MAGAZINE

KODAK SUPER-XX

High speed film for fast-action shots at maximum shutter speeds—for clear, detailed exposures of floor shows and indoor athletic events—for snapshots at home after dark. Grain has been kept at a minimum. In all popular amateur sizes.

KODAK
PANATOMIC-X
EXTRA FINE GRAIN FILM
ONE MAGAZINE
FX 135
DAYLIGHT LOADING MAGAZINE

KODAK PANATOMIC-X

Distinguished by microscopically fine grain. Enlargements of great magnification show no appreciable graininess. Startling brilliance and detail faithfully retained. Sufficiently fast for all normal requirements. In all popular amateur sizes.

YOU'RE working with a more capable camera when you load with the new Kodak Films. Kodak Plus-X combines high speed and fine grain. Kodak Super-XX offers extreme speed; Kodak Panatomic-X, phenomenally fine grain. Typical Eastman quality, uniformity, latitude. Fully panchromatic. Special base guards against halation or light fog. Both Kodak Super-XX and Kodak Panatomic-X in all popular amateur sizes; Kodak Plus-X in miniature sizes. At your dealer's . . . Eastman Kodak Co., Rochester, N. Y.

GOING TO THE NEW YORK FAIR? Be sure to take your Kodak along. Stop at the Kodak Building, where Eastman experts will advise you what to take and how to take it. And there you'll see the unique and gorgeous Cavalcade of Color—the Greatest Photographic Show on Earth. Nothing like it has ever been seen before. Don't miss it.

EASTMAN KODAK COMPANY, *ROCHESTER, N. Y.*

What the Camera Clubs Are Doing

Club Auctions Are Popular

True Yankee thrift marks the auctions of photographic equipment being held by two Connecticut clubs. The Milford Camera Club has run several of these affairs, the last having resulted in a 100% turnover of all used goods put up for sale. The Housatonic Camera Club collects the merchandise to be auctioned, displays it in the window of a local camera store, thus building up additional interest in the auction which is to follow.

W. Penna. Salon Attracts Many

The Western Pennsylvania Salon of Photography, held recently under the auspices of the Greater Pittsburgh Photographic Society, attracted more than four thousand persons during the first nine days it was opened to the public. Nearly 150 prints were hung in this show, there having been more than 700 entries from contributors in 35 states and seven foreign countries. The Greater Pittsburgh Photographic Society has club rooms at 210 Parkway Avenue, North Side, Pittsburgh, Pa. W. F. Munhall is corresponding secretary, and may be addressed at 4672 Sylvan Avenue.

Tech Club Builds Own Rooms

Reviving camera club interest which had existed prior to the war, a group of photographic enthusiasts at Armour Institute of Technology in Chicago succeeded in obtaining the use of a suite of rooms in one of the older school buildings. Following intensive work done by the members themselves, including plumbing, plastering, carpentry, and electrical work, the club now has a spacious studio, officers' room, reception room, and two darkrooms.

Known as The Armour Eye, the present club is composed of 19 student engineers and a professor of mechanical drawing. Meetings are held once a month. Club secretary is Robert Grunwald, 3300 Federal St., Chicago, Ill.

Elementary Classes Offered

The St. John's Camerades, of Detroit, Mich., are giving the third consecutive group of students a six weeks' course in elementary photography under the direction of Maurice R. Foster. Anyone interested in attending these meetings is cordially invited. Enjoying what are said to be excellent facilities for developing, printing, and enlarging, the group meets each Monday evening at 7:30 p.m., in the basement of the St. John's Club, 33 E. Montcalm St., Detroit, Mich.

Mr. Foster is interested in the formation of a corresponding camera club. Details may be had by addressing him at 15487 Mendota Ave., Detroit, Mich. A stamped, self-addressed envelope should be enclosed.

Hands Across the Border

At the invitation of the Monterrey (Mex.) Camera Club, members of the Laredo (Tex.) Camera Club recently made a weekend trip to Monterrey for two days of photographic excursions to surrounding points of interest. The Americans were taken to remote Mexican villages where they could obtain pictures not often afforded tourists who frequent only the populated centers along the highway.

Exchange exhibitions of work done during this joint excursion are being arranged, each club awarding a prize for the best photograph entered by a member of the other club. Some forty members of the two clubs made this first trip, and in view of its success other such meetings are planned for the future.

Fourth Inter-Club Competition

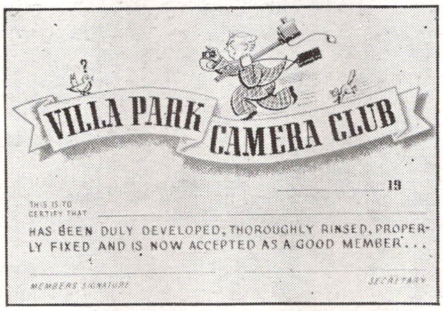
The Florida Camera Club (Tampa) came through with flying colors to win the fourth in the series of inter-club competitions sponsored by the Manhattan Camera Club. The subject assigned for the fourth contest was *Work*.

Despite its determination to keep the Popular Photography trophy, the Camera Clique of St. Louis had to pack it up and send it south. Second honors this time went to the Reading (Pa.) Camera Club, while a quadruple tie for the next position found these clubs deadlocked: Camera *Clique of* St. Louis, The Ft. Wayne (Ind.) Camera Club, the Paterson (N. J.) Camera Club, and the Queen City Pictorialists of Cincinnati, O.

The general print quality evident among the most recent entries surpasses that shown in earlier competitions. Participating clubs appear to have become aware of the keenness of the competition, and an excellent spirit of determination to break into the ranking ten has arisen.

Clever Membership Card

Members of the Villa Park Camera Club (Chicago west suburban area) recently devised a truly photographic membership card. The idea was drawn up and inked in, following which a 2¼x3¼ copy negative was shot. From this it was a simple matter to run off contact prints as they were needed. Darkroom terminology has been used in wording the card in such a manner as to leave no doubt as to its photographic connotation.


VILLA PARK CAMERA CLUB

19

THIS IS TO CERTIFY THAT

HAS BEEN DULY DEVELOPED, THOROUGHLY RINSED, PROPERLY FIXED AND IS NOW ACCEPTED AS A GOOD MEMBER...

MEMBERS SIGNATURE

SECRETARY

We Hear - - -

CURRENT popularity of radio programs featuring question and answer competitions between teams has resulted in a no less popular stunt being presented by the Miniature C. C. of Philadelphia, Pa. Six teams, composed of club members, competed at a recent meeting, the subject being photographic questions and answers. . . . Camera Group of Brooklyn, N. Y., has taken new quarters in New York City, at 24 Stone St., where this organization will have the use of a fully equipped studio. . . . An unusual idea helped Rockaway (N. Y.) Photographic Society to get started. The first members were secured through a list of people who had borrowed photographic literature from the local public library. Local librarians elsewhere are in position to render similar assistance to camera enthusiasts who wish to organize. . . . Dayton (O.) Camera and Ciné Club covers a subject thoroughly. During one meeting a popular dance band and two attractive dancers furnished a wealth of material for candid and posed shots by the members; the following meeting was scheduled to present a classical string ensemble as photographic subjects. Meetings are held at the Dayton Art Institute, where plenty of light and space are provided for those wishing to take pictures on the spot. . . .

Best wishes to the Chicago C. C., which celebrated its 35th anniversary in February. Throughout March the club will afford midwestern fans an opportunity to see the Pictorial Section of the Royal Photographic Society's Salon. This show will be hung at club headquarters, 137 North Wabash Ave., Chicago, Ill., and will be open to the public (no admission charge) daily from 11 to 5 p.m., Sundays from 2 to 6 p.m. If you plan to visit Chicago during March, or if you live within the metropolitan area, plan to avail yourself of this opportunity to view a fine salon. . . . Milford C. C. (Conn.) has made arrangements with a local portrait specialist whereby groups of five club members (or less) may spend an entire evening in his studio, studying portrait technique, experimenting with lights, and making portraits on the spot.

Miniature C. C. of Oakland (Cal.) has issued for its members a neat booklet which contains the club's aims, customs, print rules, membership requirements, obligations, etc. Booklet is designed primarily to acquaint new members with the above information, also "to remind old timers of a few things they may have forgotten." It should make meetings and other club routine click smoothly. . . . Bound Brook C. C. (N. J.) approaches pictorialism sensibly by arranging lectures on Design and Composition, to be delivered by the art director of the local school system. . . . Membership in the Chicago & Northwestern Winter Sports Camera Club is open to amateur photographers who during the past winter may have visited any winter sports area served by the C. & N. W. Ry. Cash prizes and honorable mentions will be awarded the best winter shots submitted by members prior to midnight of April 10, 1939. For details address the club at 400 W. Madison St., Chicago. . . .

Atlanta C. C. (Ga.) has a traveling salon which is available for loan to other clubs. Write to C. S. Mingledorff, 252 Peachtree St., N. W., Atlanta, Ga. . . . Metropolitan C C Council starts third semester of its school of photography April 3. Details may be obtained through the Council office at 106 W. 13th St., New York City. . . . Duke-Durham C. C. has an interesting program schedule, including suggestions to new clubs, which might prove helpful to some of you. Write to Mrs. Howard Gamble, % the club, Durham, N. C., if you are interested. . . . Stratford, Conn., is celebrating its 300th anniversary, which event has prompted Stratford C. C. to sponsor a photo contest open to all residents having the use of cameras. Subjects will include old houses and other objects of historical interest in Stratford. . . . That's all for this time.

Still More for the Roster

Most of the following clubs wish to exchange correspondence or prints, or both, with other organizations. Some of these groups are newly-formed, others are of longer standing; those in either category will be pleased to hear from you.

Washington Camera Club, Henry M. Temple, Sec., 400 Locust St., Washington, Pa.

Ithaca Camera Club, Alfred Baron, Sec., 1001 N. Cayuga St., Ithaca, N. Y.

Appomattox River Camera Club, W. W. Murphy, Sec., 416 Park Ave., Hopewell, Va.

Richmond Hill Camera Club, Paul Di Giovanni, Sec., 125-02 Liberty Ave., Richmond Hill, N. Y.

Battelle Camera Club, H. R. Limbacher, Sec., 505 King Ave., Columbus, O.

Lawrence Camera Club (Lawrence, Mass.), Mary E. Cunio, Sec., 3 Railroad Ave., North Andover, Mass.

G. B. Camera Club, Ernesto Molinary, Pres., Box 3734, Santurce, Puerto Rico.

Rangeley Lakes Camera Club, LeRoy Nile, Sec., Box 55, Rangeley, Me.

Rockaway Photographic Society, Mortimer Forer, Sec., % Queens Borough Library, Far Rockaway, N. Y.

Silv-O-Lite Camera Club (Goshen, Ind.), Robert Marty, Sec., Millersburg, Ind.

35 Milliteers, H. M. Tenny, Guardian Trust Building, Denver, Colo.

Monongahela Camera Club, C. G. Rumbaugh, Sec., 1126 Fourth St., Monongahela, Pa.

Atlanta Camera Club, Leonard Rosinger, Sec.-Treas., Post Office Box 684, Atlanta, Ga.

Aremac Photo Club, Reuben J. Grodsky, Sec., 970 Fiftieth St., Brooklyn, N. Y.

"Y" Camera Club of Indianapolis, Evan E. Wedow, 2712 N. Meridian St., Indianapolis, Ind.

Cleveland Amateur Cinematographers, Gordon Zellers, Sec., Hotel Carter, Cleveland, O.

Decatur Camera Club, Mrs. Palmer Eicher, Sec., 121 N. Third St., Decatur, Ind.

Cazenovia Camera Club, Carlton M. Straub, Sec., 18 Albany St., Cazenovia, N. Y.

Camera Club of Richmond, Inc., J. Lynn Miller, Central National Bank Building, Richmond, Va.

Dayton Power & Light Camera Club, E. J. Dungan, Sec., Dayton Power and Light Company, Dayton, O.

Vancouver Photographic Society (formerly Vancouver Camera Club), D. C. Stinson, Sec., Post Office Box 566, Vancouver, B. C., Canada.

Western Photo Show

TO commemorate photography's centennial, The Los Angeles Camera Club is sponsoring one of the largest exhibits ever held in the West, to be held at the Los Angeles Biltmore Hotel in May. Competition is limited to those residing west of the Mississippi. Classifications for every possible type of photograph are included, prizes and trophies to be awarded. Closing date May 1st; no entry fee. For further details write to the club at 2504 West 7th St., Los Angeles, Calif.

A GREAT NEW NAME LOOMS UP ON THE CAMERA HORIZON . . .

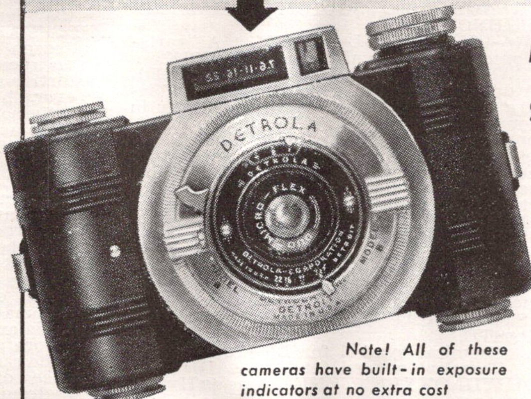
With Built-In Exposure Indicator . . . at no extra cost!

YOU BE THE JUDGE

We want you . . . the camera fan . . . to be the judge. We know that there is nothing we will say about these great new Detrola Cameras that you will let go unquestioned. Therefore . . . we ask you to compare Detrola Cameras . . . feature for feature . . . with any camera in the world in these price classes or higher. You know cameras. That's why we are confident you will say Detrola *is* "America's greatest candid camera value"!

John J. Ross

MADE IN U.S.A.



Note! All of these cameras have built-in exposure indicators at no extra cost

MODEL "D" Sensational at **$15.00**

Because It Has Standard Features That are Expensive EXTRAS on other Cameras.

- Detrola f:4.5 anastigmat lens corrected for color photography
- 1/25-1/200 second shutter speeds
- Built-in exposure indicator
- Set of 3 exposure calibrator discs
- Micromatic focus adjustment
- Telescoping lens mount.

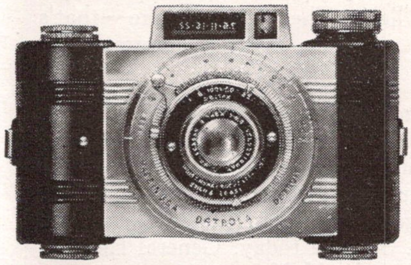
MODEL "E" *with f:3.5 Lens . . .* **$19.50**

Model E is the same as Model D in every respect, except that it is equipped with f:3.5 anastigmat lens corrected for color photography.

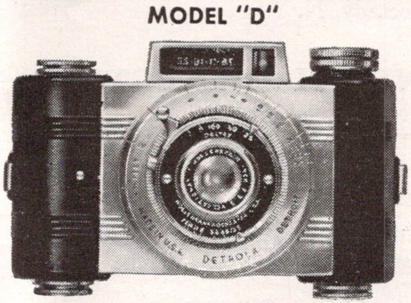
MODEL "B" SELLS FOR JUST $9.50

. . . Just Try It Out . . . Test Its Great Features!

- f:7.9 lens
- Time, bulb and instantaneous
- Built-in exposure indicator
- Precision built
- Telescoping lens mount.



MODEL "D"



MODEL "E"

All Detrola candid cameras use inexpensive 8 exposure Eastman 127 or Agfa A8 film. 25c a roll—16 photos

SEE YOUR DEALER *Or Write to Detrola Corp., Detroit, Mich.*

GENERAL ELECTRIC
EXPOSURE METER

Select

Your Exposure Meter

WHEN selecting your exposure meter, be sure that it is sensitive, sharply directional, and accurate. These are three exposure-meter essentials that assure better pictures and mean savings in film. You can check these features in the G-E exposure meter.

Remove the hood in very dim light. Note the readable indication—that's sensitivity. It will mean much in the pictures you take.

The hood on the G-E meter excludes stray light—admits only the light from the scene. Check this by noting the sharp cutoff indicated by the needle movement as you turn the meter from dim to bright light—that's the sharp directional effect. It's another reason why you get the *correct* camera setting.

Compare two of the meters under the same light. They'll read alike—that's accuracy, a quality that assures better pictures.

Remember, too, that the G-E meter can be used to determine the correct time for printing and enlarging. Consider these features when you make your selection. You get them *all* in the G-E exposure meter. See one today. General Electric, Schenectady, N. Y.

GENERAL ELECTRIC

General Electric, Dept. 6F-201
Schenectady, N. Y.

Please send descriptive literature on the G-E exposure meter.

Name..

Address..

City.............................. *State*.......................

A Glossary for Photography

PARABOLA. A mathematical curve, one of the conic sections, whose importance to photography lies in the fact that parabolic reflectors with a point source of light placed at their focus will throw a beam of parallel rays.

PARAFFIN OIL. A light hydrocarbon which is highly fluorescent. It is used to sensitize plates for photographing the ultra-violet portion of the spectrum.

PARAFORMALDEHYDE. $(CH_2O)_x$. A developing agent used with hydroquinone for the rapid development of films used for line work, reproduction of print, and similar purposes.

PARAFORMALDEHYDE DEVELOPER. A developer used with Reprolith film.

PARALLAX. The distance between the camera lens and the viewfinder lens. Not important when subject is 8 feet or more away, but for closer subjects, especially movie titles, correction must be made to effect proper centering. Parallax is vertical in some cameras, horizontal in others, and both in still others.

PARALLAX REFLECTOR. A reflector in the form of a parabolic mirror which projects the light from a point source in a beam of parallel rays; sometimes used in enlargers instead of condensers.

PARA-METHYL-AMINO-PHENOL-SULPHATE $(C_6H_3(OH)CH_3NHCH_3)_2.H_2SO_4$. A developing agent with high REDUCTION POTENTIAL, generally used in combination with hydroquinone. It is marketed under a great variety of trade-names, including Elon, Rhodol, Metol, Genol, Pictol, Photol, Monomet.

PARAMIDOPHENOL. A developing agent for films or plates characterized by good keeping qualities in concentrated solution. It is used with potassium metabisulphite and sodium or potassium hydroxide.

PARAMINOPHENOLATE. See SODIUM PARAMIDOPHENOLATE.

PARANOL. See SODIUM PARAMINOPHENOLATE.

PARA-OXYPHENYL-GLYCIN. A variation of the chemical name of GLYCIN.

PARAPHENYLENE DIAMINE (BASE). A developing agent which gives very fine-grained images and is used, sometimes in combination with GLYCIN, in the development of miniature camera film. Paraphenylene diamine base is poisonous to a certain number of people, and for this reason paraphenylene diamine hydrochloride is being substituted for the base.

PARAPHENYLENE DIAMINE HYDROCHLORIDE. A developing agent very similar to paraphenylene diamine base in developing action, but without the poisonous qualities which make the base objectionable to some people.

PASTE, ENCAUSTIC. See ENCAUSTIC PASTE.

Pb. Chemical symbol for LEAD.

Pd. Chemical symbol for PALLADIUM.

p-DIHYDROXYBENZENE. Same as Hydroquinone.

PEAR ESSENCE, PEAR OIL. See ACETONE.

PEARL ASH. A synonym for Potassium carbonate.

PEAR-SHAPED BULB. An electric bulb with a pear-shaped glass envelope (ordinary bulbs for home use are pear-shaped); used in studio lights and for printers and enlargers.

PELLET'S PROCESS. A process which yields reversed blue-prints, resulting in blue lines on a white ground; also known as positive cyanotype.

PELLICLE. A thin skin, film, or layer; the emulsion of a film without the base. About 1873 Richard Kennet, an English amateur, patented a method of preserving a photographic emulsion separately and marketed it as a "sensitive pellicle."

PENCIL OF LIGHT. If a cone of light whose apex lies in a point source is separated out, a light pencil is obtained which is homocentric with all other light pencils emitted by that source. The straight line about which the pencil of light is symmetrical is its axis. If it is followed away from the point source, it is called a divergent pencil; if toward the point, a convergent pencil.

PENSE PAPER. A photographic paper on pink stock.

PENTACETYLCELLULOSE. Same as Cellulose acetate.

PENTAGON FILM. The trade name of an orthochromatic film with a non-halation backing.

PENTANE. C_5H_{12}. An inflammable liquid hydrocarbon used in the PENTANE LAMP.

PENTANE LAMP. See STANDARD PENTANE LAMP.

PERCHLORIDE OF GOLD. See GOLD CHLORIDE.

PERCHLORIDE OF MERCURY. See MERCURIC CHLORIDE.

PERHYDROL. Same as Hydrogen peroxide.

PERIKOL. The trade name of an isocyanine sensitizing dye, similar to ethyl red but with greater sensitizing powers.

PERMANENT WHITE. Same as Barium sulphate.

PERMANGANATE. Same as Potassium permanganate.

PERMANGANATE REDUCER. A negative reducer made with potassium permanganate and sulphuric acid, mixed immediately before using, and diluted.

PERSISTENCE OF VISION. See AFTER-IMAGE.

PERSPECTIVE. The representation of solid three-dimensional objects on a plane surface. In photography, the rendering of perspective depends upon two things: the focal length of the lens, and the distance from which the final print is viewed. The most natural rendering of perspective is secured in a contact print when it is viewed at a distance equal to the focal length of the taking lens.

PETIT, CHARLES G. Invented a process (1878) of making half-tone plates by photography of a relief in plaster prepared from a carbon print.

PEROL, PETROLEUM ETHER, PETROLEUM SPIRIT. Same as Benzine.

PETZVAL CONDITION. The hypothesis formulated by Petzval stating that to secure a flat field in an ANASTIGMAT, the sum of the focal powers of the individual surfaces, when divided by the product of the refractive indices on either side of the surface, should be zero.

PETZVAL, JOSEPH. The first optician to use optical theory and calculations to evolve a lens. Developed the first portrait lens in 1840.

PETZVAL LENS. A lens designed by Joseph Petzval of Vienna in 1840. It had an aperture of *f* 6 and was free from distortion and chromatically corrected. However, because it was not corrected for astigmatism, it was replaced by anastigmats as soon as they became available.

PHENAKISTOSCOPE. See ZOETROPE.

PHENIC ACID. See PHENOL.

PHENOL. C_6H_5OH. An organic alcohol used in gelatin emulsions and dextrine mountants as a preservative. Also known as carbolic acid, phenic acid, phenyl alcohol, phenyl hydrate.

PHENOSAFRANINE. An emulsion dye having desensitizing properties. Emulsions, except the most ultra-rapid panchromatic plates, treated with this dye after exposure and during or immediately before development, may be developed by yellow or bright ruby light. In the presence of phenosafranine the action of hydroquinone becomes more energetic; that of pyro-soda and amidol less energetic; and metol-hydroquinone is unaffected.

PHENYL ALCOHOL, PHENYL HYDRATE. See PHENOL.

PHOSPHORESCENCE. (1) FLUORESCENCE which persists in a substance after the illumination ceases is called phosphorescence, and the substance which exhibits this property is said to be phosphorescent. The sulphides of calcium, barium, and strontium are strongly phosphorescent. (2) Chemical phosphorescence, as distinguished from the variety described above, which may be termed physical, is due to energy produced by a chemical reaction and is emitted in the form of phosphorescent light. Examples of this type of phosphorescence are the glowing of decaying vegetation, of fireflies and glow-worms, and of phosphorus itself.

PHONOPHOTOGRAPHY. The processes of photographing sound waves, or the vibrations produced in an instrument by sound waves.

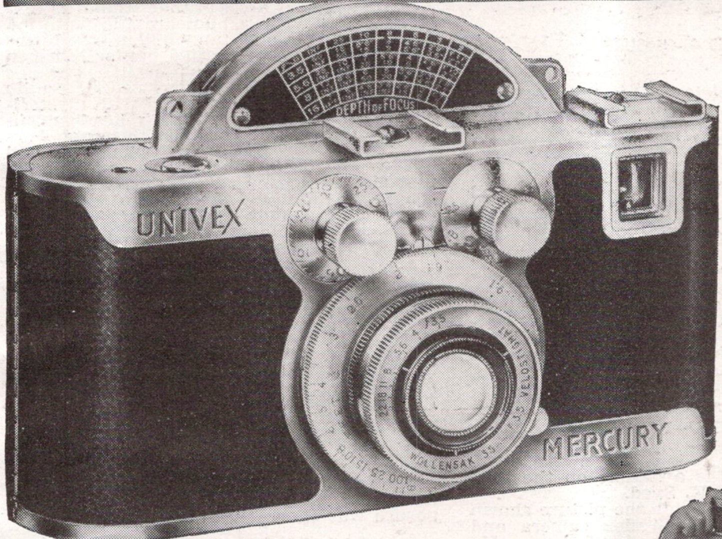
PHOSPHORESCENT. Having the property of PHOSPHORESCENCE.

PHOSPHORUS. P. A non-metallic element, the base of phosphoric acid, and the phosphates, many of which have important photographic uses.

PHOT. A unit of illumination in the Centimeter-Gram-Second system defined as the direct illumination on a surface 1 centimeter from a uniform point source of light of one international candle. The more generally used unit is the milliphot, the thousandth part of a phot, which equals 10 lux or 0.929 foot candle.

(To be continued next month)

America's Challenge To The World's Finest Cameras!



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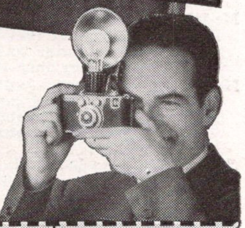

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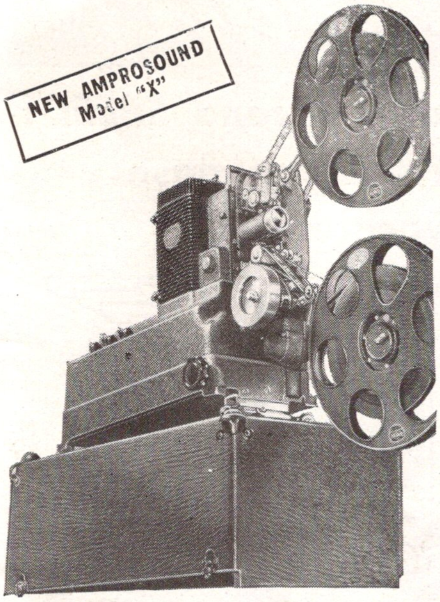

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Notes on the Salon Section

PAGE 39—PICTURE OF THE MONTH

Alfred T. Palmer took this fine photograph with a 4x5 Speed Graphic camera and 5¼″ Zeiss Tessar *f* 4.5 lens on Agfa Superpan Press film. It was made in bright sunlight and the exposure was 1/100 second at *f* 22.

PAGES 40-41—SURF

These excellent pictures by Ray Atkeson were, with one exception, taken with a 4x5 Graflex camera and 6⅜″ Kodak Anastigmat *f* 4.5 lens fitted with a K-2 (yellow) filter. The film used was Eastman Panchro Press or Eastman Super Sensitive, and exposures varied from 1/65 to 1/250 second with the lens stopped down to *f* 8 or *f* 11.

The picture entitled *Explosion* was made with a 2¼x3¼ Zeiss Ikonta C. 10.5 cm Zeiss Tessar *f* 3.8 lens, and K-2 filter on Agfa Superpan film. The exposure was 1/100 second at *f* 8.

All of these photographs were taken at points along the Oregon coast. By recording favorable combinations of water, light, and clouds the photographer has depicted the sea in its various moods.

PAGE 42—TILLERS

No technical data is available on the photograph by Akhtar K. Syed.

J. W. McManigal made the picture shown with a 4x5 Series D Graflex camera and 7½″ Kodak Anastigmat *f* 4.5 lens. He used Eastman Super Sensitive Panchromatic film and the exposure indicated by his Weston meter. The picture was taken during a County Farm Bureau demonstration which was being held to show local farmers how to build farm terraces.

PAGE 43—SPRING

The picture by Harold Harvey was taken with a 35 mm Contax camera and 85 mm Sonnar *f* 2 lens. Exposure was determined by Weston meter and the shot made on DuPont Superior Pan film. The film was developed in Defender 777 Panthermic, a formula which Harvey perfected.

Frank Fenner's photograph was made along the Desplaines River near Morton Grove, Ill. The odd-shaped icicles formed by the undulations of the river are shown entirely out of the water, the river having been unusually low on the day this picture was taken. Difficulty was experienced in getting the shot due to the muddy condition of the shore for several feet back from the water's edge.

The picture was made with a 9x12 cm Welta plate-back camera and 13.5 cm Zeiss Tessar *f* 4.5 lens on Eastman Super Sensitive Panchromatic film. A tripod was used so that, with the lens stopped down to *f* 32, a relatively slow exposure of ⅕ second could be made.

PAGE 44—DANCERS

The photograph by Remie Lohse was taken with a 9x12 cm plate-back Ideal B camera and Zeiss Tessar *f* 4.5 lens on Agfa Superpan cut film. It is a synchronized flash shot, two flash bulbs being used in conjunction with a Kalart Synchronizer, taken at 1/200 second with the lens stopped down to *f* 8. Lohse made this picture of the famous Strauss dancers at the Casino de Paree, New York night club, during an afternoon rehearsal. Footlight effects were created by careful placement of the flash bulbs.

PAGE 45—APRIL

Leo Nejelski made this fine picture on 6th Avenue at 53rd Street, New York City. He used a 2¼x2¼ Super Ikonta B and 8 cm Zeiss Tessar *f* 2.8 lens. The exposure was 1/50 second at *f* 8 on Eastman Panatomic film. A splendid article on finding picture subjects by Mr. Nejelski appears on page 20 of this issue.

PAGES 46-47—FROM INDIA

Proving his statement that the East is the ideal place to find character studies, Stanley Jepson submits this interesting spread of pictures which he made in India. He says, "I have collected various quaint faces . . . and you will see that India is extremely rich in this photographic material. Any bazaar street in any Indian city teems with these people; bearded border hillsmen from the frontier with hawklike features and jaunty gait; an ash smeared sadhu wearing only a loin cloth and with mysterious caste markings on his forehead; members of forest tribes laden with garish jewelry; women laden with gems who will quickly veil behind their handy saris at the first sign of a camera."

Jepson, editor of *The Illustrated Weekly of India*, is a noted salon contributor and an Associate of the Royal Photographic Society of Great Britain.

PAGE 48—DOORWAYS

Paul Faris took this picture at Columbia University in New York City at one of the entrances to the campus. He used a Vollenda camera and 5 cm Schneider Radionar *f* 3.5 lens. The exposure was 1/50 second at *f* 6.3 on Eastman Panatomic film.

The photograph by Pragher was taken with a 2¼x3¼ Plaubel Makina and 4″ Anticomar *f* 2.9 lens on panchromatic film. It was made in Spain and shows the vista of a Spanish street through the curtain hung in the doorway of a shop. The exposure was 1/50 second a *f* 12.

PAGE 49—STATIONS

Harvey Falk took his picture, *The Late Mr. Jones*, with a 2¼x2¼ Super Ikonta B camera and 8 cm Zeiss Tessar *f* 2.8 lens. Illumination was furnished by the lights from the station, and with the lens stopped down to *f* 8 an exposure of 1 minute was required. Agfa Superpan Press film was used. This photograph was selected for a current Zeiss Ikon Exhibition.

The picture by Kingsley W. Given was taken with a 4x5 Speed Graphic camera and 6⅜″ Bausch & Lomb *f* 4.5 Tessar lens. The exposure was 2 minutes at *f* 8 on Agfa Superpan Press film.

Given made this shot at the Union Pacific Depot at Manhattan, Kansas, one early winter night. It was cold and a heavy fog had settled. Given, returning from a party at midnight, saw a picture possibility. He rushed home, changed from dinner jacket to hunting clothes, loaded his camera, and went back to make the shot. The illumination was furnished by a nearby street lamp and the lights from the station.

Both of these pictures won recognition in the Inter-Club competition sponsored by the Manhattan Camera Club.

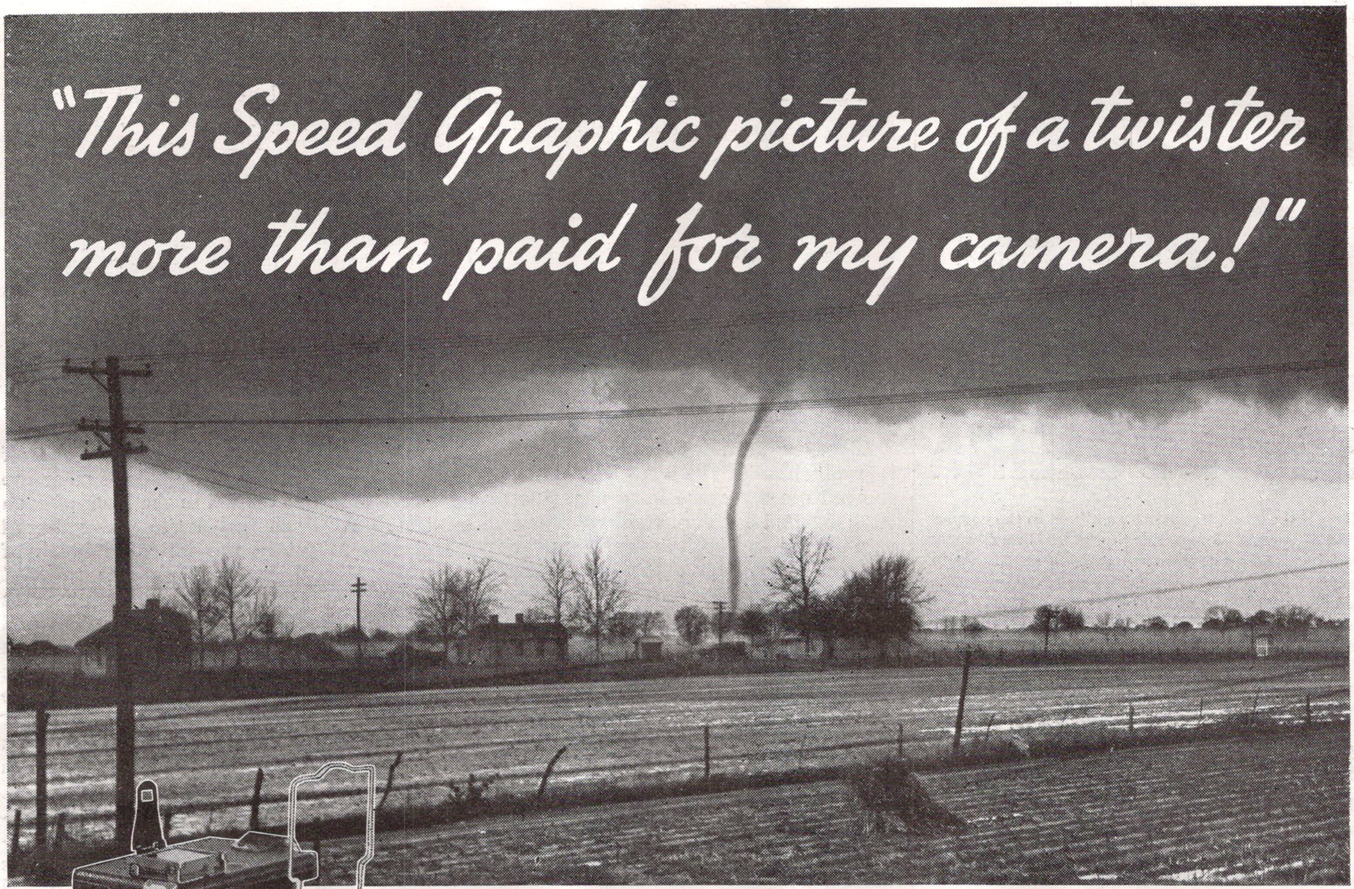
PAGE 50—STUDY

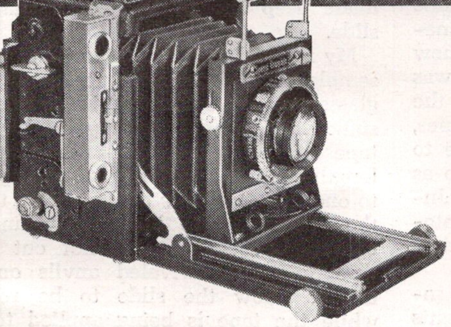
David C. Kent made this fine picture in his studio with an Eastman 5x7 view camera and 9½ Skopar *f* 4.5 lens. Illumination was furnished by one 500-watt Solite and an exposure of ½ second made at *f* 5.6 on Agfa Superpan Portrait cut film. After the print was made Kent employed a technique in finishing which is somewhat similar to Mortensen's Abrasion-Tone method.

THE APRIL COVER

This month's cover illustration is made from a Kodachrome transparency taken by Gene Lester, Hollywood photographer. It was made at Malibu Beach, California. The model is lovely "Ginger" Altan, a former stand-in and double for Ginger Rogers, who left pictures a few months ago in order to devote her full time to commercial modeling. The sarong she is wearing was made from seventeen cents worth of material which she wrapped around herself, native fashion, and secured with three safety pins.

The shot was taken in direct sunlight, no reflectors being used. Lester made the picture on daylight type Kodachrome with a Model II Contax camera and 85 mm Sonnar f 2 lens. The exposure was 1/125th second with the lens stopped down to f 4.5.


"This Speed Graphic picture of a twister more than paid for my camera!"



SPEED GRAPHIC FEATURES

include Graflex focal plane shutter, interchangeable lenses, flash synchronization, eye-level view finders, accessory coupled range finders, ground glass focusing and long bellows draw. The new Miniature Speed Graphic has in addition: built-in focal plane shutter flash synchronization, dual focusing knobs, accessory internally coupled range finders and extreme compactness.

ALTHOUGH less than 500 yards from this oncoming "twister," Grover Brinkman of Okawville, Ill., tripped his shutter . . . and his new Speed Graphic caught one of the spectacular pictures of the year! It was bought by Life Magazine and many other publications and, in his own words, "more than paid for my fully equipped Speed Graphic."

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ANOTHER GRAFLEX SCOOP!

For the third consecutive year in the Annual Exhibit of the Press Photographers' Association of New York Graflex-made Cameras captured the major honors. The winners of the first prizes in all four classes of the 1939 contest used Graflex-made Cameras—three Speed Graphics and one Series D Graflex.

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The Super Dollina is available with the following ultra-fast lenses which are set in Compur Rapid shutters with speeds up to 1/500th second.

2-in. Schneider Xenar f/2.8 lens......$ 82.50
2-in. Zeiss Tessar f/2.8 lens.......... 95.00
2-in. Schneider Xenon f/2 lens........ 100.00

DOLLINA "O" and II

Priced Lower Than Ever

The Dollina "O", long a favorite with minicam enthusiasts, will be more popular than ever at these newly reduced prices. Its many features include: automatic counting and film-locking device, built-in optical view finder, front lens focusing to about 4 ft., closed front, tripod socket, attached range finder clip, loops for neckstrap and many other highly desirable features. Genuine leather cover and bellows. Makes 36 exposures 1 x 1½ in. on 35mm. film.

The Dollina "O" equipped with Certar f/4.5 lens in Vario type shutter (speeds: 1/25, 1/50, 1/100 sec., bulb and time); lists at only. $19.50
With Certar Anastigmat f/2.9 lens in Compur "B" shutter, only............ $29.50

DOLLINA II

These deluxe cameras have also been reduced in price. They are equipped with built-in range finders of the most dependable type, similar to those in the Super Dollina. They also have optical tubular view finders and other refinements including: Automatic counting and film-locking device, Compur Rapid shutter with speeds up to 1/500, etched-in depth of focus table, closed front, focusing to about three feet, loops for neck-strap, tripod socket, etc.

Dollina II with Schneider Radionar f/2.9.............................. $52.50
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Emelie Danielson

(*Continued from page 37*)

light, and only reflected light lights silver. You must have light colored things all around it and reflect them into it. For this photograph (she pointed to one of her photographs which is reproduced with this article) I had white sheets and white paper all around the silverware. The ceiling of the room was white and I had a light on the ceiling and lights on the sheets.

"Before I photographed the silver I puttied it with ordinary window putty. That makes silver photograph like silver."

Miss Danielson believes that every photograph should have a special theme. She showed me a picture in a magazine of a chair against a piano. Neither object was emphasized and both looked unattractive.

"You always have to keep in mind," she said, "what the purpose of the photograph is. From a photograph like this, it is almost impossible to tell. If you are trying to sell pianos, emphasize pianos. If you are trying to call attention to a particular chair, emphasize the chair. If you are taking a photograph to illustrate a particular article, find out what the viewpoint of the writer is, and see that your photograph helps to convey his idea.

"For instance, this photograph of the glasses with the nude figure in the same room may seem like a strange combination of two unlike things until you know the purpose of the photograph. It was made to illustrate an article in which the writer called attention to smooth lines, and the magazine wanted the figure to be shown in the same photograph so as to bring out the author's viewpoint. Incidentally, those glasses were photographed standing on groundglass with the light underneath."

When she goes out to photograph interiors she takes from one to ten lights with her, most of them 500-watt bulbs, although she uses on occasion from 500 to 1500-watt bulbs.

In determining the proper exposure, she always uses an exposure meter.

"How did we ever get along without exposure meters?" she marvelled. "Of course, we took pictures even before they were invented, but there was always the problem of mistaken judgment. I used to expose many more films than I actually needed, fearing that some of them would be taken at the wrong exposure."

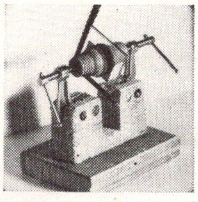
Today she usually makes two negatives, one at the reading of the meter, and then another one at double the reading to get details into shadows.

"For instance," she explained, "if you have very white walls and dark carpets, the walls might be overexposed and the carpets underexposed. For that reason I always take an additional picture that is not at the reading of the meter."

Someone once defined genius as "an infinite capacity for taking pains." If that definition of genius is correct, then Emelie Danielson qualifies.—⚑

Lantern Slide Vise

HERE is an easily assembled little device that leaves both of your hands free to apply the binder to the edge of a transparency. The materials used were obtained at the five and ten cent store and the wood scrap pile. Two small "C" clamps, two rubber bottle stoppers, four 1½" x 3/16" stove bolts and nuts, four wood screws, and two pieces of wood constitute the material list.



C-clamp vise.

One leg of each "C" clamp is cut off with a hack-saw. Two holes to clear the stove bolts are drilled in the back of each clamp. A "T" shaped slot to fit the altered clamps is cut in the top of a block of wood 1⅛" thick by 1¾" wide by 3½" long. The clamps are lined up in the slot and four stove bolts passed through wood and clamps hold them in position. Next the block with the clamps mounted on it is secured by four wood screws to a base ¾" thick by 3½" wide by 4½" in size. The bottle stoppers, which have holes in them that just fit over the little anvils on the clamps, are placed in position. Two saw cuts are made in the block between the clamps and the wood is chiseled away. This slot in my vise was made deep enough to clear a standard slide.

My method of using this vise is to assemble the transparency, mask, and cover glasses, place them in the vise and tighten sufficiently to hold securely. A piece of tape slightly longer than the combined length of the four sides is cut and applied to one side. A razor blade is used to cut the tape enough so that it will round the corner, but the tape is not cut clear through. The swiveled anvils on the clamps allow the slide to be rotated while the tape is being applied to the lantern slide.—*Chas. E. Hearnshaw, Kalamazoo, Mich.*

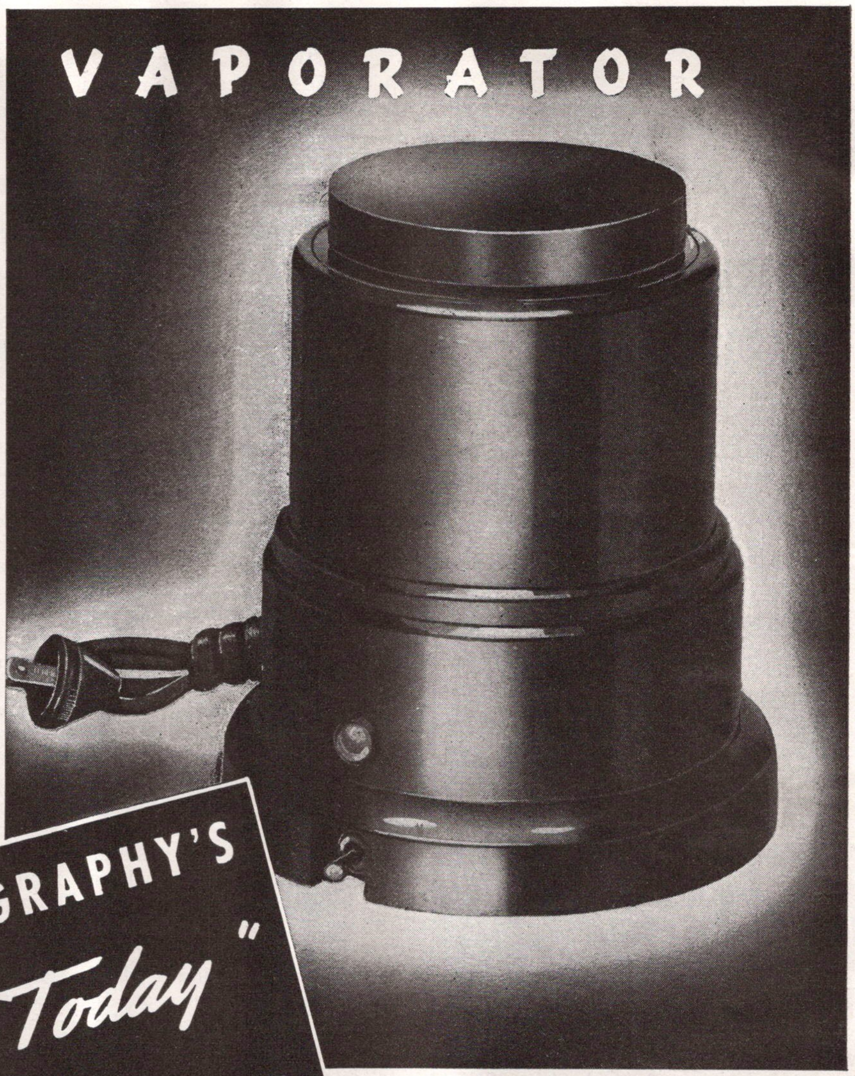
Camera Dressing

ORDINARY black liquid shoe polish, when applied to the leather covering of your camera, will make it shine like new. First, rub surface well with a damp cloth to remove grease caused from handling, then apply a good thick coat of polish. When thoroughly dry rub lightly with a soft cloth to remove excess dried polish and to give desired gloss. If polish gets on the metal parts it can be scaled off with your thumb nail as soon as it is dry.

Applying polish.

This dressing will work on box and other cheaper cloth covered cameras as well and is clean and safe to handle as long as it does not become wet.—*Cecil Underwood, Booneville, Mo.*

THE F-R VAPORATOR



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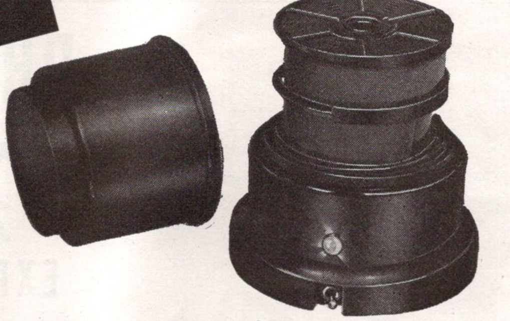

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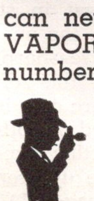
(good for 40 operations)



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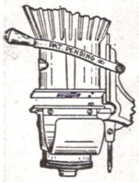

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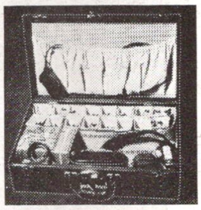
An Inexpensive Fitted Camera Case

NEEDING a case for my minicam that would hold, in addition to the camera, a supply of flash bulbs, speedgun, exposure meter, sunshade, etc., and being unwilling to pay the price for an especially built one, I put together the case illustrated at a total cost of $1.20.



The fitted case.

The case itself was bought at a chain drugstore, a $1.00 imitation-leather overnight suitcase. I stopped at a local upholsterer's and bought two yards of upholstery webbing—tough, strong stuff used to support chair and sofa springs, and found its width was just slightly less than the depth of the case. The webbing cost 8c per yard, plus 4c for a handful of short upholstery tacks. All that remained was to hold the various accessories in the place I wished them to occupy—my speedflash battery case in the lower right corner, photoelectric meter next to it, Contax in its eveready case, lens shade, etc. In the rear of the case I stretched, tightly, two strips of webbing at the width of the baby flash lamps I use. This holds sixteen bulbs in their paper jackets; I find it simple to remove and replace the bulbs without removing the paper cartons from the webbing partitions.

The webbing was tacked to the sides of the case after taking a "dead reckoning" by holding each accessory in place, then removing it and tacking the webbing in place. This arrangement, of course, can be adjusted for any combination of accessories.—*Jack Hanley, New York City.*

Substitute for Blotters

BEING caught short on blotters for drying my enlargements, I recently found an excellent substitute in paper kitchen towels. They are white, very absorbent, and come 150 sheets to a roll. At three rolls for a quarter, they are a worth-while investment for the darkroom.—*H. Wittstock, Parma, Ohio.*

Soft Focus

(Continued from page 23)

As a matter of fact, that's just what has happened.

It is far better to create soft focus when exposing the negative; then the reverse effect takes place. The highlights creep into the shadows, contrast is lessened, exposures need not be so long, spots of sunshine seem to give forth rays of light, and the picture acquires that vibration—that atmospheric quality—which a painter strives to put on his canvas. Here, again, there are many ways to get soft focus in the negative and no two of them will give quite the same result. Diffusion discs are made and sold by several companies. They look like a filter but are made of colorless glass in which a pattern of lines has been traced, and are placed in front of the lens when making an exposure. It is quite easy to stretch one or two thicknesses of black tulle on a piece of cardboard which fits over the lens. Tulle is a very light material used for evening dresses and veils. It looks like fine net but has a six-sided mesh, and the diffusion it gives is different and better than that produced by a material such as chiffon which has a four-sided mesh. If two thicknesses of tulle are used, they should be so arranged that the patterns do not coincide, but produce a still finer mesh.

A device sold by many camera dealers and known as the Misonne Soft-Sharp Screen is made of very thin celluloid (embossed) and has three long slits in it. Rays of light passing through these openings form the sharp image, and the rays which go through the celluloid form slightly diffused images superimposed on the main sharp image. The results can be controlled, that is to say, the diffusion can be increased or decreased at will by varying the area of the lens covered.

The very best way to procure diffused images is to use a soft focus lens. There are several of these on the market and your camera dealer can assist you in selecting one suitable for your camera. All soft focus lenses reduce contrast to a considerable extent, and when making a portrait it is possible to use a snappy lighting which would not be satisfactory if the pictures were being taken with the regular anastigmat. Soft focus lenses give results which are different from those obtained with an anastigmat in still another way. Whereas with the anastigmat a given plane is either wire-sharp or unpleasantly blurred, with the soft focus lens the planes which are not in focus appear only more diffused or softer than the rest of the picture. In this respect, too, the soft focus lenses are different from

(Continued on page 78)

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... to meet the exacting requirements of modern photography

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THE BIG PHOTOGRAPHIC NEWS OF 1939

Density Control

ANNOUNCING MONOBATH

AFTER almost five years of continuous research this unique chemical compound, about which there have been so many rumors, will soon be ready for wide-spread distribution.

MONOBATH is not only the first stable single-bath fixer-developer—it is the first tested and proved *density control* photographic developer.

Built into this patented solution is an automatic chemical time cycle. When negatives processed in MONOBATH have developed to full tonal value, *development ceases and fixing begins!* From that instant on no further action takes place to spoil negatives. Graininess cannot increase with over-development. Over-development is impossible with MONOBATH.

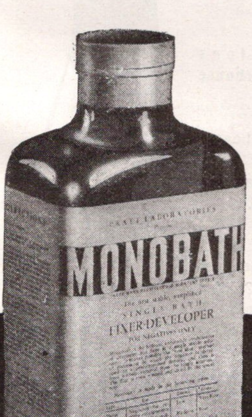
With this amazing new system, no clock or thermometer is needed. Rich, full-toned negatives every time, whether the temperature of the bath is 70° or 80° F. and whether the film is left in the bath an hour or over night.

All negatives emerging from any one of the three types of MONOBATH are of practically the same gamma regardless of time or temperature. The photographer is now granted a more complete *density control* than could formerly be obtained with the most elaborate laboratory operation using the customary two-bath developer and fixer system with controlled time and temperature.

Thus a new and positive uniformity is possible that insures proper negative standards and eliminates annoying failures. The user has only to choose one of the three MONOBATH types, depending upon whether low, medium or high gamma negatives are wanted. From there on the only photographic variants are the brightness range of the subject and, of course, the exposure.

In test territories users have been amazed with the results, dealers besieged. This "photographic-revolution-in-a-bottle" creates a furor wherever introduced. Skeptics want to challenge MONOBATH to work this photo-chemical miracle in their own dark-rooms. They come to scoff and remain to praise!

Definitely *density control* is the big photographic news of 1939.



All three types of MONOBATH yield full gradations, with shadow details rendered true to scale and with unblocked highlights. MONOBATH compensates for considerable over-exposure.

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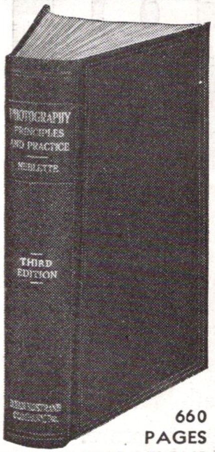

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soft focusing devices and far superior to them, for the latter softens every point of the picture equally.

Soft focus lenses are usually undercorrected lenses in which all aberrations or defects have not been corrected, and the usual defect (which in this case becomes an advantage) is the lack of correction for color.

There are many who cannot afford a special soft focus lens, and for those I shall describe an inexpensive device which gives somewhat similar results with a camera having a double-extension bellows. Let us take such a camera and place in front of the anastigmat a supplementary lens of the Distar type. This is a slip-on lens which lengthens the focal length of the anastigmat with which it is used. We have to extend the bellows in order to focus the image on the groundglass, and this image has become much larger than before. In most cases this is a great advantage, particularly in portraiture, and with large openings the image is also much softer. If we make a sieve of black paper as illustrated and place it between the supplementary lens and the anastigmat, the main image formed through the center hole will be sharp, while those formed through the surrounding smaller holes will be superimposed on the basic image, providing the softness. The regular lens diaphragm should be left wide open, of course.

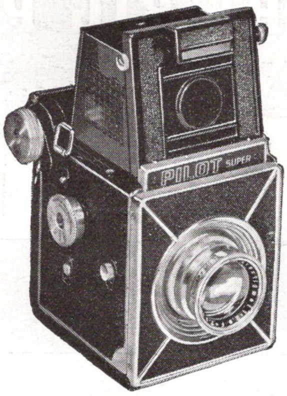
Let me make it clear that in this method of obtaining soft focus it is the supplementary lens which gives the softness and not the black sieve. The sieve restrains and controls the soft image, and makes it sharper. Similar sieves used in front of any soft focus lens will greatly improve its qualities, and the depth of field obtainable is considerably greater than that of a regular anastigmat.

Now for some working directions. The black paper sieve is made of paper such as comes in the packages of bromide paper. The center hole is cut by hand with a sharp pocket-knife, and the smaller holes are punched with the tool used for punching holes in leather. These punches usually can be purchased at the five and ten cent stores. Tests will have to be made to determine proper exposure to give. In any case exposure time has to be increased because the focal length of your lens is increased by the supplementary lens, and because the black sieve does not allow all of the light to penetrate inside the camera.

It is better to focus "out" than "in." This means that when moving the lens back and forth seems to produce little difference in the sharpening of the image on the groundglass use the longer extension. The foreground is then sharp while distant planes are pleasingly softened, and contrast is somewhat decreased.

Those who are interested in producing really good artistic photographs know that superior results always require more care, more work, and that slipshod procedure only yields unsatisfactory results. If you want to get new and interesting effects, try a few soft focus shots next *time you are after* some real pictures. You'll be pleasantly surprised at the excellent results obtained.—■

PILOT Super



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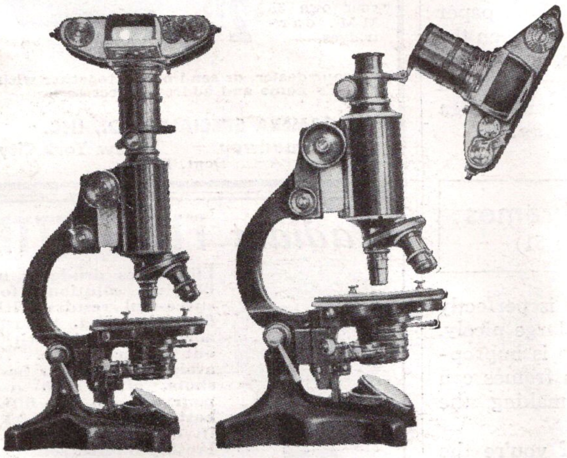
For Photomicrographs, the Kine Exakta is ideal because of its reflex-mirror focusing which makes it possible to focus upon and view the object through the microscope.

The Kine Exakta Micro-Adapter serves as a convenient connection between the camera and microscope. The Exakta lens is simply removed, the Micro-Adapter is inserted into the front of the camera and attached to the eyepiece of the microscope.



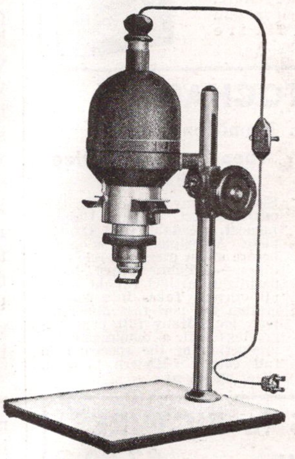
The adapter is hinged so that the Kine Exakta may be swung away from the microscope if eyepieces are to be changed or any adjustment should be made. The image secured by means of microscope objective and eyepiece is then photographed by the Kine Exakta.

The Micro-Adapter fits all standard 25 mm. diameter microscope draw-tubes and is supplied in a leatherette-covered wooden case.

8925-K—Kine Exakta Micro-Adapter **$25.00**

(Kine Exakta Micro-Adapter for 33 mm. diameter draw-tube supplied at same price. Unless otherwise stated, 25 mm. model will be supplied.)

PROJECTION LUMIMAX



The Projection LUMIMAX is a metal enlarger of refined design. The lamphouse position is controlled by means of a hand wheel while the focusing is done by turning a large disc which is easily grasped. The lamphouse may be turned to a horizontal position for enlargements of greater scope or for projection of slides in color or black and white. The KINE EXAKTA lens is used—to make your enlargements as sharp as your negatives!

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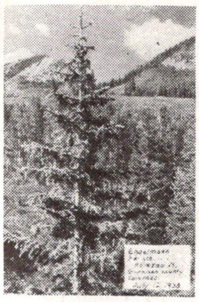
Title Blocks in Prints

A NEAT and attractive way to place a brief legend on the face of a print is to make within the frame of the picture a white title block in which the words may be written with India ink (or on some surfaces of paper, with a typewriter).

To do this, cut a piece of opaque material the size of the title block desired. For projection printing, use a thick heavy material which will lie flat without being held in place. After the sensitive paper is in the easel and ready for the exposure, lay the rectangle in the corner where it will obscure the least important details of the picture. Be sure to leave an even margin of 1/16" to ⅛" on the two outer edges to continue the frame of the picture unbroken. Make the exposure as usual, and you will find, when the print is developed, a white space in which to write the legend.


Print showing a white title block.

For contact prints a piece of Scotch masking tape of the proper size and shape may be affixed to the glass of the printing frame, or a rectangle of black paper may be inserted in the frame between the glass and negative. The size, shape, and position of the title blocks may be varied to secure different arrangements.—*Ben and Rachel Osborn, Salina, Kan.*

Stills from Movie Frames

(*Continued from page 51*)

or two frames where action is perfectly "frozen," and such frames enlarge nicely. Even if the original exposure is improperly timed, occasionally such frames can be light-controlled when making the negative or the final print.

Now for the enlarging. If you're the sort who likes to tinker, you can knock together an enlarger of your own by using your movie projector. It is often advisable to remove the high-wattage lamp and insert one of much weaker illumination if this is possible. If a colored slide or a screen pops up when you use the still attachment on your projector, remove it temporarily. If you can't project stills with your outfit try to borrow one.

The type and size of film for the enlarged intermediate negative will depend on the image photographed. It is rarely advisable to blow up 16 mm. frames to more than 4x5 inches, and 3¼x4¼ is even better. The 8 mm. frame, four times smaller in area than 16 mm., looks best if not enlarged greater than approximately 1½x2 inches.

Contact prints are made from these intermediate negatives, and good detail often means enlargements up to 8x10 inches and even greater. If 16 mm. negative movie film is employed, enlarge-

(*Continued on page 82*)

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ON ALL NEWSSTANDS

ments can be made directly on paper. For ordinary black-and-white movies, there is no need to use cut film sensitive to all colors. Process or commercial ortho film, with or without the matte backing for retouching, is ideal for monochrome stuff. This contrasty film is sufficiently slow for safelight work, whereas faster film might produce overexposure. On the other hand, process and commercial ortho films are partially blind to color frames. Consequently, when shooting monochrome enlargements from color frames, try a finegrain panchromatic film. Filters may be used between film and light source just as in outdoor filming.

Fundamentally, you focus the selected frame on a white paper "screen," turn off all lights, replace paper with cut film mounted or thumb-tacked to wall or drawing board, cover possible projector light leaks with a black cloth hood, and give the proper exposure. The film is then removed, developed, fixed, washed, and dried in the usual manner. To simplify the process, construct some sort of a frame which will hold the film firmly in position during the exposure and permit easy removal. The cine titler furnishes an excellent medium for holding the cut film vertically in the title card easel. A cut film holder may be hinged to a common base on which the projector is clamped. Coat all or a part of the holder slide a dull white for focusing. Then switch off the lights, focus the frame, withdraw the slide, turn on the projector for the duration of the exposure, replace the slide, and turn on the room lights. The cut film holder can then be reversed side for side, or a new holder inserted in the hinged frame for succeeding pictures. This same idea is also applicable to film packs.

You can mask off undesirable portions of the scene by pulling back the projector to produce a larger image. In lieu of a shutter, a fairly rapid "snapshot" can be executed by snapping on and off the projector light switch, or raising or lowering the hand or a square of black cardboard before the projector lens, with light turned on full.

Suppose you haven't the time or inclination to fumble with homemade gadgets. Ready-made frame enlargers are available. The Filmo 16 mm. projector-enlarger (no longer in production) may still be had from second hand photographic dealers. This consists of a special attachment which fits over the projection lens. It really is an elongated tube in the form of a portable darkroom, at the farther end of which film is inserted to receive the enlarged image. Employing a new principle, Eastman's 16 mm. frame enlarger looks and acts like a regular fixed-focus Kodak. A combination film gate and opal glass diffusing cap fits over the lens, and the desired frame is slipped over a perforation pin and clamped in position. Loaded with either Panatomic or Super Sensitive Pan 616 roll film, it is possible to secure eight 2½x3⅜ inch negatives.

At this writing, no 8 mm. frame enlarger is available, but 16 mm. outfits can be adapted satisfactorily by masking off a smaller frame area with black cellulose

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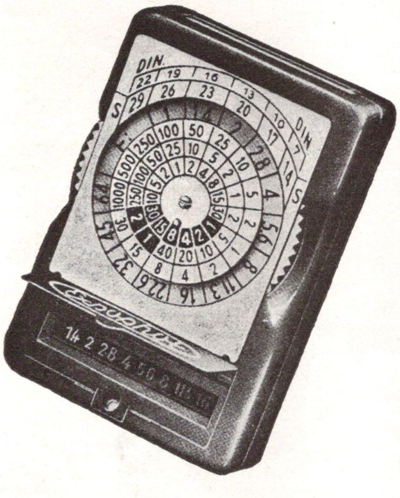

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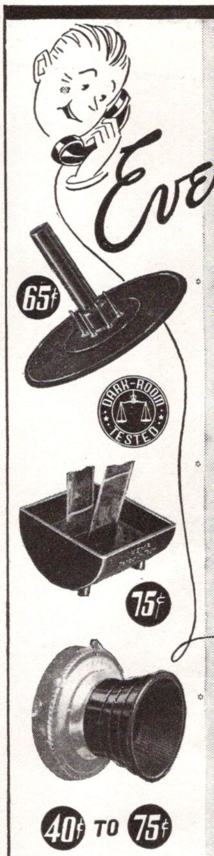

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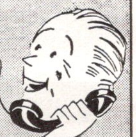

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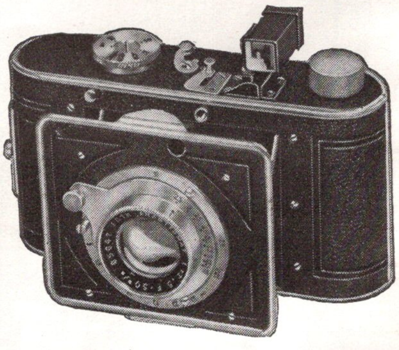

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These are exceptionally fine miniatures for their surprisingly low prices. They are of precise and quality construction throughout, yet amazingly light and compact. And now for the first time in many months, the manufacturer is able to keep pace with the demand.

The Foth-Derby cameras are equipped with the latest type delayed-action focal plane shutters with speeds from 1/25 to 1/500 second, large magnifying tube-sight view finders and have many other features, including front lens focusing up to 3½ feet. You get 16 pictures, half V.P. size (1¼ x 1⅝) on a roll of standard V.P. film.

with 2" Foth Anastigmat f/3.5........$21.50
with 2" Foth Anastigmat f/2.5........ 27.50

If your dealer cannot supply you with full information, write for booklet on these cameras and their accessories.

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NEXT MONTH!

THE BIGGEST ISSUE IN OUR HISTORY

This Ivan Dmitri color photograph will be featured on the May cover.

The greatest, most ambitious photographic magazine ever published. All-inclusive directory number, commemorating the *Second Anniversary of Popular Photography Monthly*

The following data will give you some idea of the Magnitude of Our SECOND ANNIVERSARY ISSUE

COMPLETE DIRECTORIES

On These Subjects:

(featuring manufacturer, address, distributor, prices, characteristics, etc.)

- STILL CAMERAS
- MOVIE CAMERAS
- STILL PROJECTORS
- MOVIE PROJECTORS
- FILM AND PLATES
  - For Still Cameras
- MOVIE FILM GUIDE
- ENLARGERS
- PRINTERS
- FILTERS
- LENS SHADES
- EXPOSURE METERS
  - And Guides
- EXPOSURE METERS
  - And Guides for Printing and Enlarging
- DEVELOPING TANKS
- LENSES
- FRONT LENSES
  - (Or Auxiliary)
- PREPARED DEVELOPERS
- PROJECTION PAPERS
- CONTACT PAPERS
- RANGEFINDERS
- FLASH SYNCHRONIZERS
- FLASHLIGHT BULBS
- LAMP BULBS
  - For Photographic Use (Excluding Flashbulbs)
- PROJECTION SCREENS
- TRIPODS
  - And Tripod Heads
- CASES FOR CAMERAS
  - And Accessories

All these *in addition* to our regular features and normal contents; the most sensational array of articles by the really big names in photography that we have ever assembled for one single issue.

Never before has anything even been attempted in the photographic field that can be compared to our SECOND ANNIVERSARY ISSUE. It is the biggest thing we've ever done, and we know you'll admit that for sheer value it is absolutely priceless.

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Popular Photography

DIRECTORY ISSUE

ON SALE APRIL 11th

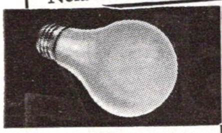
New life for the old
FAMILY ALBUM
with indoor "snaps"

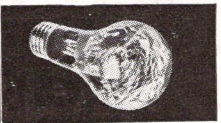
1. Fed up? Are you tired of photo albums that are all "vacation shots?" Then, here's a suggestion to give new life to *your* album. Take some indoor snapshots with your camera and G-E MAZDA Photo lamps.

2. For action, natural as can be, you'll want G-E MAZDA Photo*flash* lamps. Their split-second flash helps you get crisp, clear photos like this. Each lamp gets one picture. Good for color, too.

3. And for dozens of shots, get G-E MAZDA Photoflood lamps. Their brighter, whiter, continuous light, used with new "super" type high speed film permits snapshots indoors, even with box cameras. Grand for home movies. Buy them where you buy film.

FREE! Helpful new exposure guide for synchronized flash shots with G-E MAZDA Photo*flash* lamps. Write Department 166-PP, General Electric Company, Nela Park, Cleveland, Ohio.





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No. 2 (was 50c) now . . . list 40c

Action? Pets?
G-E MAZDA
Photo*flash* Lamps
No. 10 . . . list 15c
Brand New
No. 21 (Synchro-Press) list 20c

GENERAL ELECTRIC
MAZDA PHOTO LAMPS

tape, or exposing two frames at a time.

Enlarged movie frames have many uses. In addition to supplementing your private picture collection, they offer candid sidelights not often discernible to human eyes at the time the movies were exposed. In fact, a 400-ft. 16 mm. reel contains 16,000 picture possibilities for enlargement. By enlarging, say, alternate frames of a movie sequence, it is possible to produce a set of prints showing each step in the recorded action. Very few still cameras which will take rapid individual scenes of fast action are available today. Frame enlargements of representative sections of a reel insure the preservation of at least an inanimate record in case the reel is ever lost or damaged. If the main title and subtitles are enlarged in similar fashion, a complete record of the film and its highlights may be retained for reference when planning future showings. These stills are useful for advance publicity if you are showing a film at some school, church, or social function.

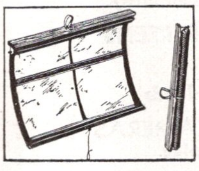
Few cinematographers, looking for novel title effects, realize that a frame enlargement of a particularly good scene will sometimes provide a striking background for a title. If you favor positive film for your title work, substitute a sheet of sensitized bromide paper in your cut film holder, and project a negative enlargement, with all values in reverse. Print over the title background with black ink, photograph with positive movie film, and develop. Your finished title will come out with white letters floating over a normally appearing background.

Even contact prints, reproduced on matte surface paper to reduce the effect of grain, may be slipped in the cine titler and photographed to provide backgrounds for all title footage to be shot. Then the film may be rewound in the darkroom, rethreaded, and rephotographed with only the titling.

If you've been missing out on this new angle in movie making, buy or build a frame enlarger of your own and pack fun in your future darkroom work.—⚑

Handy Portable Reflector

An ordinary shade roller makes a good portable reflector for photographers. Attach the roller brackets to a stick of wood, insert shade, and wire the spring end so it won't slip out. With Scotch tape fasten tinfoil to the inside of the shade. The pieces from film boxes are suitable. A ring or preferably a heavy rubber band, such as cut from an inner tube, can be tied to middle of stick for use as a hanger and moved to cast reflection where wanted. A piece of string on the shade stick can be hooked over a small screw or nail in the mounting stick to keep the roller in place when carried. It is best to have this string long enough to go once around entire outfit when rolled up. —*C. C. Caswell, Clarinda, Ia.*



Shade reflector.

BRILLIANCE and PRECISION IN PROJECTION WITH
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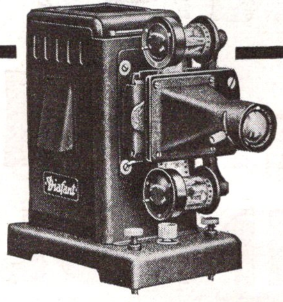

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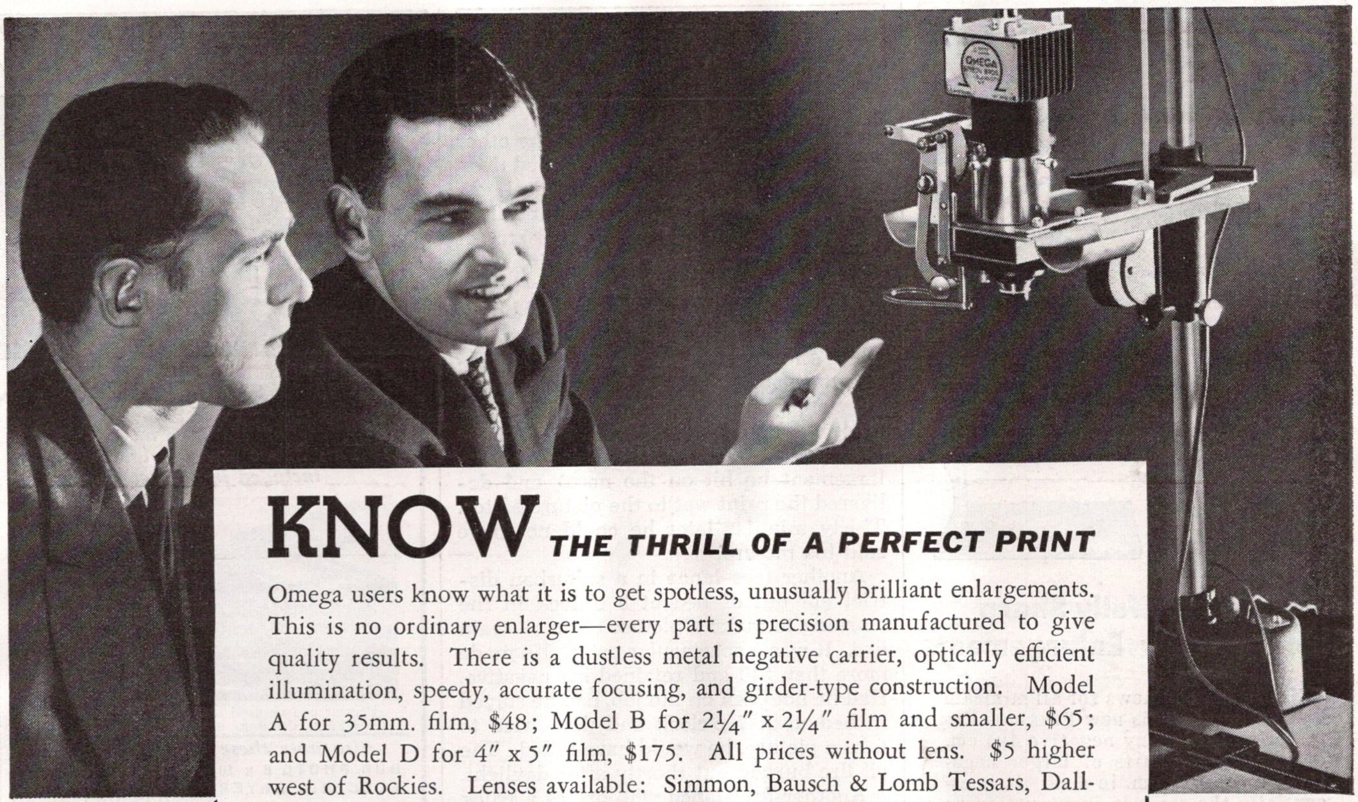

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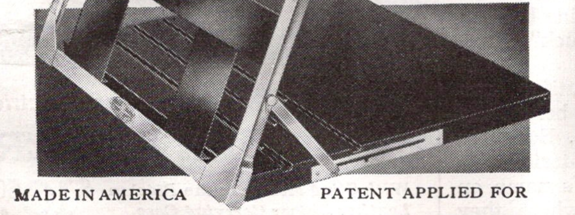

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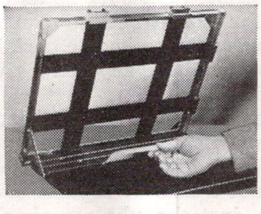

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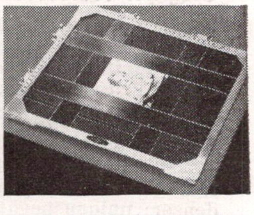

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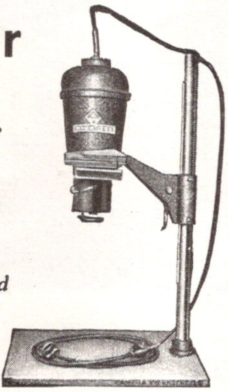

for Beautifully Sharp Salon Quality Enlargements

HERE is good news for all minicam owners! This new Praxidos Enlarger will take any negative 4x4 cm. or smaller—or parts of larger negatives up to 4x4 cm. in size. It is essentially the same in construction as the popular 6x6 cm. Model "O" Praxidos. Complete with a 6 cm. f/4.5 lens, diaphragm, condenser, negative carrier, 35 mm. mask, bulb and baseboard **$27.50**

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Extra 6 cm. f/4.5 Anastigmat lens with diaphragm mounted **on metal** board to interchange in above, for use with negatives 4x4 cm. or smaller **$15.00**

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Tips for Free-Lance

(Continued from page 38)

make other sales (and he did make other sales). This photographer happened upon the scene of a hit-and-run accident. Quickly assembling his camera and flash equipment, he hopped on the rear step of an ambulance that was backing in, made one exposure without having time to adjust his focusing scale. He rushed home, developed his negative, brought it to the editor's desk wet. The engraving deadline was near. The staff cameramen were busy on other assignments. So this free-lance quickly adapted himself to a strange darkroom, made a print (his first enlargement he hit on the nose) and delivered the print wet to the picture editor. Thirty minutes later he could not have sold his picture.

Another free-lance in a suburban district got out of bed at 3 o'clock in the morning to make a picture of an oil train fire. It was a spectacular print. He made more than $10 and retained his negative. Had he not been on the job, had he stayed in bed until 7 o'clock and then tried to take a picture, he would have failed. The oil fire burned out shortly after daylight.

Another free-lance who drives a truck carries a $6 Bantam with him. It's always handy and he nets a few dollars extra every month, for there always is a nice wreck or two every week along his route.

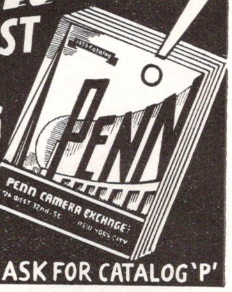
Neither the newspaper editor nor the magazine editor is interested in the amateur's investment in equipment. The writer has seen far better pictures turned out by a photographer with $10 worth of equipment than by one with $1,000 invested. It is not the editor's job to help the photographer liquidate his investment. The results only are what count. Out in Kansas is a fellow with an old view camera patched together with wire and tape. Not far from him is another photographer with lenses galore and cameras suited to every occasion. The man with the old view camera takes far better pictures and sells far more. Yet the man with all the equipment sometimes complains because he does not have any better "luck" selling his pictures.

The other day some beautiful farm scenes arrived from the wheat belt. They were intended for rotogravure. But there was not a line of caption material with them—just the photographer's name on the package. Who knows where they were taken and when? The free-lance has been queried, by wire, to find out what his pictures are all about. He hasn't answered yet. But I'm sure he really wants to sell those pictures.

The ambitious free-lance who can dig out a picture story in his community and make a sequence of good photographs often has the opportunity to sell a rotogravure layout. The trend of pictures has been for some time toward sequences that tell the story in themselves. The average newspaper will accept such contributions with the understanding that duplicate prints may be offered non-competitive publications or magazines.

Don't line up seven or eight news fig-

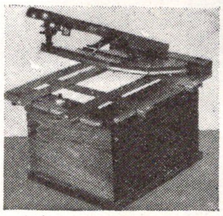
Here It Is
PENN'S LATEST 104 PAGE CATALOG FREE



SEND FOR IT TO-DAY • ASK FOR CATALOG 'P'

☞ **NOTE IMPORTANT CORRECTIONS**

This Scoop was too late to be included in our catalog



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EXPOSURE METER

With Sling and Genuine Pigskin Leather Zipper Carrying Case **$10.50**

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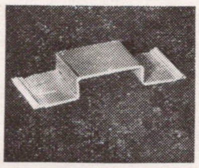
ures in your home community, have them stare into the camera, make the exposure, and then expect to sell the print. If such a picture has any news value at all, try to get some action in it. A picture editor gets very, very tired of looking at just plain "mugs."

Don't expect to make a lot of money free-lancing. If you have the patience to build a reputation and learn the art thoroughly with its thousands of "angles," your income may be built up. But the *average* free-lance collects a few dollars here and there and gets a lot of fun out of doing it.

The picture editor has the fun of looking at all the work, and he really does look at *every* picture submitted. Once in awhile he finds a good one—sometimes a masterpiece!—

Mat Cutting Aid

IN cutting large mats and mounting boards much trouble is encountered in keeping the ruler from moving. By fastening a simple bracket directly onto the table and inserting one end of the straightedge in the opening no difficulty is experienced in holding the ruler with one hand.


Clamp holds ruler.

This bracket, shown in the illustration, can be made easily or purchased for a few cents at any hardware store.—*Leo Breidenbach, New York City.*

How Many Lamps —?

WITH the batteries of lights which some photographers use to light indoor scenes, it is very simple to blow out the fuses in the house or studio.

The reader's first question after reading this far will probably be, "How can I tell how many lights are safe to use at one time?" Well, of course, you can always light up a dozen or so and see. This, however, is not such a good method, as you can understand. It is better to figure beforehand whether your lighting set-up is safe or not. It is assumed that your home or studio is equipped with 15-ampere fuses. Add up the wattages of your bulbs and divide the sum by the voltage (probably 115 volts). The answer when compared to the amperage capacity of the fuse will tell you if you can use the bulbs as planned. If the number is higher than the number of amperes capacity of the fuse, the lights are unsafe.

The following table shows the number of different lamps that can be used safely with a 15-ampere fuse on 115-volt service.

No. 1 Photoflood	6 lamps
No. 2 Photoflood	3 lamps
No. 4 Photoflood	1 lamp
100-watt Mazda	16 lamps
500-watt Mazda	3 lamps
1000-watt Mazda	1 lamp

Allowance will have to be made if other electrical contrivances are to be used at the same time the lights are in use. If it is necessary to use more or larger bulbs than listed above the fuses will have to be changed. This should not be done without consulting the locally licensed electrician.—*C. A. Bronako, Euclid, Ohio.*

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Making Filters

(Continued from page 35)

posit lint from the cloth, and ruin the job. Absolute cleanliness during this procedure is very important!

Now deposit another drop of balsam on the exposed surface of the film, wipe another cover glass, lay it on top, and work the balsam outwards as before. It will be a bit more difficult to exclude the air bubbles on this side and the gelatin film and glasses will insist on sliding in opposite directions. But the knack of it is quickly mastered, and you will have little trouble keeping the assembly in proper order. Don't worry if you smear balsam on the outside of the glasses as this is easily removed later. The smearing is inevitable if too much balsam is used, and it is better to use an excess than too little.

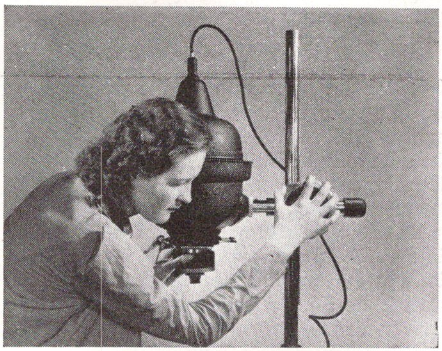
Hold the rough filter between the fingers, and wind it with rubber bands to hold it together. Don't be frugal with the bands, but do the job up right. Put the filter on a clean sheet of paper and lay it in a warm place, such as on a window sill where the rays of the sun can strike it. The glasses will settle closer to the film and more balsam will force its way out from between the parts. When the balsam ceases to run, fold the paper over the filter and put it between the leaves of a heavy book or in a clamp to dry.

This drying process is very slow and may take from two to six weeks, depending upon room temperature. After all the balsam drops on the outside of the filter have crystallized, remove it from the press and clean off excess balsam with a cloth moistened in xylol. Paint the edges of the filter with a solution of celluloid dissolved in acetone to seal it against moisture. The surfaces of the filter should be cleaned with more xylol and polished with tissue, after which the unit is ready to be mounted in a suitable cell for use before the camera lens.

The physical characteristics of this holder will, of course, depend on whether you have constructed square or round filters. The square type will require a holder made of light-weight metal with channels on the two sides and bottom, into which the individual filters can be slipped at will. A ring soldered to the back of the holder and which will slip over the lens barrel serves to hold the entire assembly in place. The round filters, which are by far the more workmanlike and convenient to use, should each be mounted in an individual holder that slips over the camera lens. Procure some heavy celluloid and some acetone. Cut some of the celluloid in small pieces, and dissolve it in a little of the acetone. Keep the solution well stoppered except while using it, as it solidifies very quickly when exposed to air.

Cut a strip of the celluloid about 3/8″ wide, and of a length sufficient to encircle the lens barrel about 1¼ times. Smear some of the celluloid-acetone solution on the overlapping portion, and draw the strip tightly around the lens,

FROM FACTORY TO YOU



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holding it in place for a few seconds so that it is firmly welded together. Now take another strip of celluloid $\frac{1}{8}''$ wider than the first. Remove the ring already formed from the lens, and wrap the second piece of celluloid over it, the $\frac{1}{8}''$ extra width forming an extension on one side. Wrap it snugly, securing it with the celluloid solution as you work.

After the shell has dried for a few minutes, take the filter and drop it into the end of the shell containing the shoulder formed by the extension. It should fit rather snugly if the filter glasses were cut to the proper size. Seal the filter in place with some slightly thickened acetone-celluloid solution, and trim off any excess extension with a razor blade.

If the shell is made of clear celluloid it can be given a dash of color by adding dye to the celluloid-acetone cement. If a black finish is wanted some ordinary black enamel, applied with a small brush, gives the finished filter a neat appearance. Painting a band around the edge of the filter itself gives a finishing touch.

Many amateurs like the sky portions of their pictures fairly dark, and foreground objects rendered normally. The construction of a special filter for such work is easy. Two separate filter sheets are cemented between the same two pieces of glass. For example, using in combination a K-2 (yellow) and a G (orange) filter the K-2 portion filters the foreground for proper tonal values while the G portion furnishes overcorrection for the sky area. Assuming that the gelatin filters are $1\frac{1}{2}''$ square, two pieces of cover glass $1\frac{1}{2}$x3 will be needed. Follow the same procedure for assembling as when mounting a single film except that the G filter is placed at one end of the glass and the K-2 at the other, their edges touching in the center. There must be no open space where they meet, neither must they overlap. Any number of special filter combinations can be made for special effects.

The finished filter is mounted in a sliding holder before the lens. In use, it is adjusted so that the dividing line between the filters coincides with the horizon line of the picture. A groundglass focusing camera is a great convenience here. The exposure is computed for the foreground or K-2 portion, the picture snapped, and there you are. If it becomes desirable to filter the entire picture with the K-2 or G portion, simply slide the filter over until the required tint covers the entire lens. Thus one unit serves a three-fold purpose.

For cine work I constructed a unit consisting of five different filters: a K-1, K-2, G, X-2, A, and a wedge that was entirely clear, all between the same two circular pieces of glass. A special device holds this filter disc before the lens so that a slight turn brings any desired filter into position. Because the lens diameter requires very small filters the entire unit measures only 2″ across, and the annoyance of handling and carrying an assortment of separate filters is eliminated.

A word or two on the care of filters will not be amiss here. Keep the filters

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"FOUR LEGS UP" Superflash photo, above, by Dan Grossi, courtesy New York Herald Tribune.

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dry and well protected from dust while they are not in use. Do not expose them unduly to the direct heat and light of the sun. The heat may cause the balsam to melt and the parts to separate, and prolonged exposure to the sun's light may cause the colors to fade. Clean them as often as you do the lens, and with the same care. If they become so dirty that breathing on them and wiping them gently with a clean piece of tissue will not polish them, use lens cleaning fluid. Never scrub them with a handkerchief as they, like the lens, are subject to scratches and abrasions.

And now that you have a supply of filters, use them, and notice how quickly the quality of your work improves.—▶

Picture Analysis

(Continued from page 28)

tent to the picture. The vertical lines of the buildings lead to the forceful upthrusting of the steeple. The vertical aspect of the church tower carries the mood of quiet dignity and strength as would the deep, full tones of organ music.

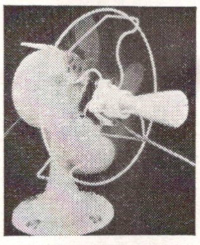
The tone values of the picture are rich. There are plenty of delicate grays between the whites and blacks. There is no misplacing of tonal values throughout the picture to lead the eyes from the center of interest. The wide expanse of sky with its delicate presentation of cloud masses, is pleasingly balanced by the deep tones at the base of the picture.

The emphasis has been correctly placed on the church steeple as the most important unit in this picture. The rhythm is unhampered by conflicting tonal values. This picture is a successful distillation of emotional release taken from a concrete subject. Its parts have been knit into a harmonious whole.

The judging of any picture can only be subjective, never objective. Any honest person can express his own personal opinion about any picture. But, this expression of opinion can be done in an orderly, systematic way. In a forthcoming analysis, this step-by-step method of asking definite questions and giving personal answers to them, will be dealt with.—▶

Electric Fan Heater

THE ordinary household fan can be converted into a heater-drier by attaching to the front of the fan a standard porcelain base into which is screwed a heater element. Both the fan plug and the plug from the element cord are each inserted in regular service outlets. This device will be found handy for drying films and for warming the basement or attic darkroom on cold winter days. Of course, if much heat is used on films they must be pre-treated in a standard hardening bath.—*William L. Hunter, Ames, Iowa.*



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Focus on Mexico

(*Continued from page 33*)

bring along a tank and do your own work in the hotel room.

Inasmuch as a tank, or any paraphernalia other than a camera, may not be considered tourist equipment by the Mexican Customs, it is possible that a deposit equal to the duty on the merchandise may have to be left with the Customs Department on entering the country. This will be refunded when you leave, however, and is very seldom required. Just to be safe, if you do bring a tank, have a receipted bill to show its cost for purposes of figuring the duty. Ordinary camera accessories such as meters, lenses, filters, etc. are all admitted without question.

According to Mexican Customs Regulations only 12 rolls of film may be admitted duty free. This ruling is quite flexible and may include a dozen reels of movie film, or the same number of spools of roll film. It is really of no particular importance, however, as all the well known American and European sensitive materials are available in Mexico City at the same prices as at home. Stocks are fresh and are tropically packed in lead or aluminum containers.

It might be well to mention the importance, and unimportance, of this tropical packing. For the casual tourist who will spend only a few weeks in Mexico City or some other spot away from the "hot country" near the coasts, this packaging is relatively unimportant. If, however, his plans are more ambitious and include a trip to the Maya ruins in Yucatan or other jungle sections, it is vital that all films be protected against heat and humidity. The air-tight casing supplied by the manufacturer is quite necessary and ideal for this purpose.

Any Mexican photo-finisher will tell you that fully 80 per cent of all the negatives he processes are overexposed. The high altitude with the resultant clear and transparent air, makes it impossible for the inexperienced to guess at exposures. Even meters sometimes appear to go hay-wire and there are a few rules I have found to be invaluable to secure properly timed negatives.

In the first place, though you may feel yourself qualified, don't attempt to use the "rule-of-thumb." Provide yourself with at least an optical extinction meter if you cannot afford a photoelectric type. Then, in bright sunlight (and you'll find that's where you will make most of your shots) get a reading from your optical meter and then stop down *two* additional stops or increase the shutter speed to give the same effect. Another method is to use a medium yellow filter for everything and then stop down only *one* opening. This is perhaps the better plan.

With any reliable photoelectric meter, you will be safer to close your diaphragm *one* more notch than the meter advises. Or else use a standard K-2 filter and do not allow for it. In making shots away from the brilliant sun, your meter will be accurate and requires no compensa-

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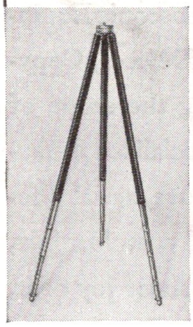

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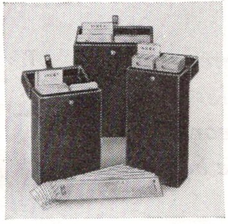

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tion. With an optical meter, however, (even in the shade if it's not too dark) shoot scenes with a filter even if the meter reading indicates it is not light enough for the yellow glass.

If I were allowed to bring only one camera accessory to Mexico, a lens shade is the item I should select. Be sure and provide yourself with one of these gadgets and get one that will hold a filter. You will find that you will use the combination for practically all of your picture taking. The sun is so all-pervading that stray beams are bouncing all over the countryside and only a good lens shade will keep your lens from getting delirium tremens.

Telling you where to do your shooting in Mexico City is just about as necessary as carrying coals to Newcastle. But there are a few spots you may miss if I don't mention them. There are some gorgeous markets right near the heart of town where you must spend a few mornings. Go early! By noon trade is over and the Indians have all left. Then, preferably on Sunday, take a bus or cab up to Chapultepec Park. If you like to photograph children, you'll be in seventh heaven. Mexican kids, with their vivid coloring, are as cute as buttons and you'll soon wish you'd brought more film. Don't miss Xochimulco—the Venice of Mexico—whose flowers are a riot of color and whose picturesque canals are unique. Spend a few hours in the Zocalo or main square where the never ending procession of "tipos Mexicanos" or Mexican types will enthrall you. Bare-footed Indians, sloe-eyed senoritas, sweets-vendors with their trays balanced on their heads, and an occasional tiny Indian mother with the face of a madonna will pass before your eyes—and lens.

Of course you wouldn't miss the bullfight. By all means go prepared to take color pictures. Every Sunday at 3:00 p. m. this colorful spectacle attracts thousands. Usually eight bulls are on the card and the show lasts about two and a half hours. There are no rules against picture taking, and if your seats are near the front, you may get some fine ones. Prices are twice as high on the "shady" side of the ring as on the "sunny" but the investment is necessary if you intend to bring your camera. For all the bulls are worked where the sun cannot confuse the *toreros* or the *matador*. Bull-fighting is a dangerous business and you can tell by the strain showing on the face of any of the beautifully costumed performers that they know a slip may mean death. The whole thing looks so ridiculously simple, I always felt some slight sympathy for the poor bull. But then, one day, not more than a dozen feet from my seat, I saw a bull charge a mounted *picador,* pick up the 1400-pound horse and the 150-pound rider on his horns and throw them against the side of the arena like a muffin. The shock made me shiver and certainly heightened my respect for the gay young men who face him with only a red cape.

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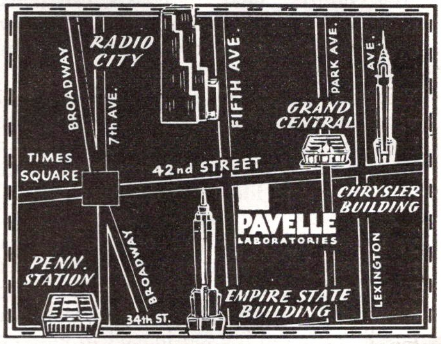

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a bull-fight. If you get seats in the first four rows it is not so necessary. You can wait until a pass is made right before you. The bull's speed will fool you so watch your shutter timing.

The heads of the spectators sitting in front of you offer the most trouble. Mexicans, however, are a polite lot and no one will complain if you jump to your feet for a moment to snap a quick one. If you use a reflex camera, forget the focusing screen and use the eye-level finder. You'll have no time for elaborate preparation. Set the lens for a spot in the arena near you and then wait until your subject arrives. As the afternoon wears on and the shadows darken, you will find that you will have to sacrifice speed for illumination, so plan on doing most of your shooting in the first hour or so.

In spite of its charm, Mexico City is still the capital and the most civilized city in the country. For real primitive types and rugged scenery, you should plan a few side trips. Most interesting of all is a visit to Oaxaca. This southern city, located about 300 miles from the capital at an altitude of 5000 feet, is far more tropical and unspoiled. It is an overnight ride on the train or a two hour trip by air. Its market is the finest and most interesting in all Mexico. It is held every Saturday and you should plan on being in town on that day. The many different Indians in their colorful tribal costumes make it a never-to-be-forgotten sight.

If you are archaeologically minded, nearby are the famed Mixtec and Zapotec ruins of Mitla and Monte Alban. It is staggering to think that these vast temples and fortresses were hundreds of years old when the Spaniards came here in the 16th Century. The Dons used them for living quarters and stables and the smoke of their kitchen fires still darkens some of the vaulted stone ceilings.

Here, in this warm, sunny country, you must constantly watch against overexposure. Don't forget to follow the little rules I mentioned before and use your lens shade as faithfully as you wear rubbers when it's slushy. If you plan to spend a week or less in Oaxaca, don't worry about tropically packed film. You are still a mile high and the air is warm but dry. If you intend to make trips into the "hot country" toward the Pacific, however, see that your spools are protected.

Other highly diverting side trips from Mexico City include the well-known Lake Patzcuaro region. The primitive fisherman of the Isle of Janitzio are picturesque enough for any photographer. Beyond Patzcuaro is the sleepy little village of Uruapan. Some of the Tarascan Indians inhabiting this area are as primitive as you can wish. For their ceremonial dances they wear grotesque, carved wooden masks. However, they are quite peaceable and you will find their bark worse than their bite.

It is so difficult to end any story of Mexico that I must make the effort right here. As a parting word, don't go to Mexico without color film.—

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Prize Contests and Markets

POPULAR PHOTOGRAPHY, 608 S. Dearborn St., Chicago, Illinois, announces a contest for pictures of charming children on page 54 of this issue. First Prize, $50; Second Prize, $25; Third Prize, $10; 25 prizes of $2 each. Submit no more than three prints. Closing date, May 1, 1939.

FRANKE & HEIDECKE, makers of the Rolleiflex and Rolleicord cameras, are sponsoring a world-wide contest for the owners of these cameras. A total of five hundred prizes will be awarded, ranging from $200 to $4. Closing date is Aug. 31, 1939. Write to Burleigh Brooks, Inc., 127 West 42nd St., New York City, American distributors of Rolleiflex and Rolleicord cameras, for rules and entry blanks.

NATIONAL SPORTSMAN, INC., 275 Newbury St., Boston, Mass., is sponsoring two photographic contests. The first is an Annual National Sporting Dog Show Photographic Competition. A trophy will be awarded for first prize, cash prizes of $10 each, ribbons, and dog accessories are other awards. Closing date, April 15th.

The second contest is a monthly competition in *Hunting and Fishing* magazine offering prizes of $10, $5, $3, and $1. Pictures must be of camping, all kinds of hunting, hunting dogs, fresh and salt water fishing, and other sporting subjects. Address National Sportsman, Inc., for complete details on both contests.

WORKS PROGRESS ADMINISTRATION, Federal Writers' Project for the City of New York, 345 Hudson St., New York City, is seeking photographs of native wild life to illustrate a *Natural History of the United States.* Pictures must *not* be taken in zoos. Funds are not available for payment, but credit will be given to the photographer. Address contributions to Ralph De Sola, Zoological Editor, Federal Writers' Project, 110 King St., New York City.

INTERNATIONAL RESEARCH CORP., 149 Fourth Ave., Ann Arbor, Michigan, is awarding each month for five months, December, 1938, to April, 1939, a first prize of $25, second prize of $10, and three additional prizes of $5 each for the best photographs taken with any model Argus camera by high school students.

The photographs winning first prize in the five monthly contests will qualify to compete for the final grand prize of $100 which will be awarded May 1, 1939. Entry blanks may be secured from all dealers handling Argus cameras.

SCRIBNER'S MAGAZINE, 570 Lexington Ave., New York City, offers $10 each, on publication, for pictures suitable for use in the "Life in the United States" photographic section of the magazine. They prefer 8x10 glossy prints dealing with the various states of the country. Type of camera used, lens, exposure, aperture, light conditions, title of picture, place taken, and other pertinent data should be noted on the back of each print. Address contributions to Harry O. Diamond, Art Director.

REDBOOK MAGAZINE is publishing 16 photographs by amateurs each month. Prizes: "Snapshot of the Month," $50, remaining 15 pictures $5 each. The best picture of the year ending October, 1939, will receive a grand prize of $500.

PARENTS' MAGAZINE, 9 East 40th Street, New York City, offers prizes of $25, $15, and $5 for the best snapshots submitted showing companionship between a father and a child. All prints must be submitted by April 1, 1939.

CARL BYOIR AND ASSOCIATES, INC., 10 East 40th St., New York City, are interested in obtaining good photographs showing the advantageous use of plate glass, mirrors, structural glass, large window areas in homes or business buildings, hospitals, schools, prisons, and interesting glass store fronts. The minimum rate paid for acceptable pictures is $10.

THE PARAMOUNT LINE, INC., 109-119 Summer St., Providence, R. I., publishers of greeting cards, will pay from $2.50 to $5.00 for pictures of dogs, cats, and landscapes. They are particularly interested in securing full-figure and full-face photographs of Persian cats. Prints should be 8 x 10 glossy surface.

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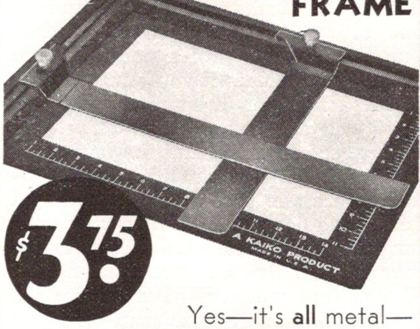

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Candid Shots

(Continued from page 8)

a bit of bungling. They give printable negatives even if the exposure was twice or half as long as it should have been for a perfect hit.

We have seen many a "veteran press photographer" turn in completely wrong exposures whenever it was a matter of shooting at a bull's eye not as big as a house. The gents were sadly off when it came to using Kodachrome or Dufaycolor and after being threatened with deduction of the cost of wasted film from their salaries, they speedily got around to seeing the light through an exposure meter.

PAUL DORSEY who recently returned from China where he was covering the war for *Life* Magazine (you'll find his story on page 10 of this issue) regards his much envied job with some cynicism. He writes us: "My background: Fifteen years of news photography, on papers, syndicates, and magazines. My ambition: Achieved. Now, after three years with *Time* and *Life*, to cut loose and work for myself, handling only those stories which are interesting." Obviously meaning that being a news photographer is a job not always as glamorous as it is said to be.

Nevertheless, he is already dreaming of a "photographic junket to Italy and Germany for *Life* and *March of Time*," to which we wish him luck.—*A. B. H.*

Pictures Everywhere

(Continued from page 21)

means of pictures. In the larger cities, effort of this type can even be concentrated in a *section* of the city. A minute analysis of a part of a city may prove even more interesting than the city as a whole.

In addition to picturing the physical aspects of cities, there are a number of profound overtones that can, and should, yield many stimulating hours for those interested. I refer particularly to the search for answers to questions that are with us continuously and which seem to elude complete and practical answering. What makes poverty? Can it be eased or helped other than by the primary parties? Must we accept the fact that the poor will be with us forever? What are the effects of poverty upon the intellectual lives of the poor? What are the effects upon their moral lives? How do they live? What do they eat? What are their ambitions? Or has continued poverty killed all ambition? What are their children like? What can they look forward to? What forces are at work to increase poverty? To lessen poverty?

The country affords an equally interesting and stimulating variety of opportunities. As a start, it might be exciting to make an interpretive record of the annual cycle on the farm. Such a problem fairly teems with ambition, hope, disappointment, grief and joy. One year represents a life cycle in miniature. It has

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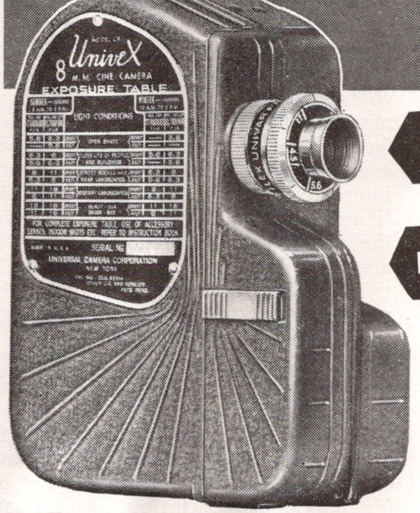

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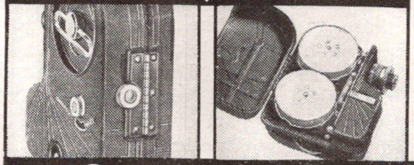

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These subjects only touch the surface of possibilities on the farm and out of doors. There are opportunities not only for individual pictures but also for series or sequences that are unmatched in present-day achievements.

Our social structure rests upon a foundation of business. To many people, however, business is little known and little understood except to the extent that they touch business, or function within it. The man turning out rods at a lathe understands the steel business only to the extent that he sees and experiences it and to the extent that it means peace and security for himself and his family. One of the reasons that some, or all, of business is under suspicion stems from the lack of understanding of business. For the serious protagonist in the cause of business the camera should prove an invaluable aid in building understanding. The camera deals with reality. Its product is believed because it is almost impossible to deny. What better way is there to show the interdependence of people than by picturing it?

Picture a life. During an era when photography and picture taking form such a large part of our existence it is interesting to notice how rarely are enough *significant* pictures made of our leading personalities, pictures that dramatize the turning points in careers, the influences that mould the personalities, the most revealing phases of their lives. The time to begin photographing a person is at the time of his infancy. Picture the characteristics of the person as he develops, the objects and the activities that are most meaningful to him at the time. Picture his relationship to his companions. Make pictures of him as he plays alone and with other children. In his portraits capture the spirit of eagerness, defiance, or anger that is characteristic at a particular age. Then follow him, or her, through the succeeding years. But do not require the subject to look at the camera each time. Try to capture the same situation that would exist if you were an unobserved visitor at the same scene.

In searching for pictures, many pho-

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J. A., of El Paso, Texas, recently won a prize offered by Popular Science Monthly for writing a "Success Story." In it he said:

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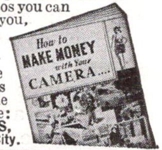

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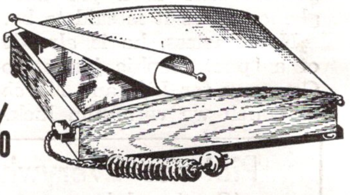

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Notice! Don't miss the big anniversary issue of POPULAR PHOTOGRAPHY. On sale at newsstands and leading camera stores on April 11th. Reserve your copy.

tographers fail to look hard enough right around them. They are surrounded by pictures, yet they wish that they could go to distant cities or foreign countries where "everywhere you point a camera there is a picture." The same attitude existed in American painting, fiction, drama, poetry, and sculpture. Today, for the most part, the richness of the American scene is realized by most writers and painters. However, many photographers have failed to recognize it. What is there about America that produces its virile, unconquered spirit? What accounts for the sharp contrast between the "haves" and the "have nots"? What produces the daring of its youth? What forces are at work on the profound changes shaping our national philosophy, our attitudes towards ourselves and those about us?

There are hundreds of questions the serious photographer can ask himself and find part of the answer with his camera. Within walking distance of your home there are enough exciting pictures to keep you busy for months, even years. Within the boundaries of your own home, of your neighborhood, are people, objects, growing things—subjects that can produce enough salon prints to keep one busy for the rest of his life. A person who makes a hobby of insects can find limitless excitement in his own back yard with a magnifying lens on his camera and a patience to stalk his subjects. The subject is not important. What you *think* about the subject matters more than anything else.

Strangely enough, in seeking out subjects, the thinking of many photographers is shallow and lukewarm. They seem to have nothing over which they can become excited or enthusiastic. Consequently, when they are making photographs, they have nothing to express, nothing to convey to others. On the other hand, the man who enjoys cooking or eating cannot photograph food without capturing in the final print some of the soul-sparkle he feels for his subject. To the man who is interested in old houses they become infused with the richness of the people who live, or have lived, in them.

Once interested in a subject or in a phase of life, it follows naturally that a person will concentrate on it, seek out knowledge and information about it, make distinctions between the good and bad parts of it, and in every way sharpen his thinking about it.

Another factor that hampers the success of many photographers is the desire to photograph everything that comes their way. No man or woman can be interested in everything. The mind does not retain everything passing through it. The mind selects. Consequently, a person can be interested deeply in only comparatively few things and can do an outstandingly good job on only a few phases of life.

Attempting all types of photography leads to mediocrity and lack of distinction. Following one's genuine interests and enthusiasms, on the other hand, is a more certain guarantee of outstanding accomplishment.—⚑

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Simple and compact, EOS indicates exposures from F/1.5 to F/25, and from 1/1000 second to 2 full minutes. Dial is calibrated for American Standard and American Scheiner film speed ratings. It provides for true renditions of both black-and-white and color shots — and it may also be used for timing your enlargements. Supplied with or without a zipper leather case to protect it against wear and shock. The EOS itself is ready for instant use . . . nothing to set . . . nothing to consult...nothing to compute.

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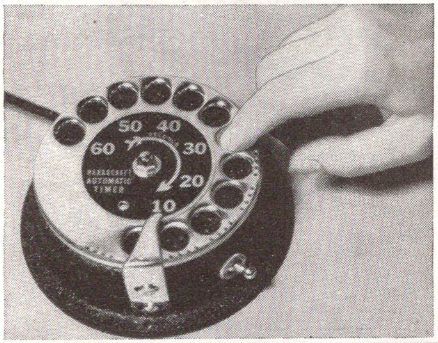

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Trade Notes and News

(*Continued from page 66*)

sure or scratching. Minaco retails for $46.88. Further information can be obtained from Miniature Camera Accessories Co., 429 W. Superior St., Chicago, Ill.

A NEW 80-page Spring catalogue is announced by Burke & James, 225 W. Madison St., Chicago, Ill. Many novel items are listed as well as a large variety of cameras which have been marked down for Spring clearance. A copy will be sent on request.

OILED SILK fabrics for use in diffusion screens are made by Blossom Mfg. Co., 79 Madison Ave., New York City. SS400 is a colorless fabric 36" wide and gives effective diffusion for ordinary purposes. It sells at 45c per yard. MW500 is an amber silk, same width, at 75c per yard and replaces filters for certain color work. Write for additional information.

MODEL F Range Finder for use with on the 3¼x4¼ Speed Graphic, newest member of the Kalart family, is announced. It has a wide range of adjustments to accommodate auxiliary lenses and will automatically focus a lense as closely as 3½ and 4 feet. Price installed, $24. For further information see your dealer or write The Kalart Co., 915 Broadway, New York City.

A PREPARATION known as Foto Foam, made according to the exclusive formula of Anton Bruehl, famous photographer, is used for cleaning films, plates, and similar materials. An 8 oz. bottle is sufficient to make 88 oz. of working solution when mixed with water. After cleaning film with Foto Foam it will dry absolutely clean and free from water marks. Price is 75c per bottle. Exclusive distributor is Wholesale Photographic Supply Co., 145 East 60th St., New York City.

New Elkay Tank.

INCORPORATING the Adjustable Split-Second Loading Reel, the new Elkay Adjustable Roll Film Tank makes its appearance on the market. Made entirely of bakelite, the tank will accommodate all sizes of roll film from 35 mm to size 116. It is designed to insure absolute safety from light, and a large funnel top eliminates waste of solution. The tank, complete with reel, sells for $3.00. More information can be obtained from your dealer or direct from Elkay Photo Products, 303 Washington St., Newark, N. J.

DISTRIBUTION of the Primus camera, new automatic minicam for pictures 2¼x3¼, has been taken over by G. Gennert, Inc., 20 West 22nd St., New York City. This camera has an improved direct finder. It comes equipped with *f* 3.8 Trinar or *f* 4.5 Zeiss Tessar lens in Compur shutter at $32 and $52.50 respectively. For further information write G. Gennert.

A SYNCHRONIZER designed for dependable service at speeds of 1/50 second and slower with the majority of cameras equipped with the primed type of shutter (Compur, Vario, Prontor II, etc.) is made by E. L. Deeter Laboratory, 6929 West Park, St. Louis, Mo. It is the Universal Model "Sure-Shot," priced at $6.00. A descriptive circular will be sent on application.

THE NEW Eastman film developer, Kodalk Fine Grain Developer (DK-20), is now available in prepared package form in quantities sufficient to prepare 1 pint, 1 quart, 1 gallon, and larger quantities.

A COMPANION to the Parvola miniature camera Model C is the new Parvola A, incorporating all of the features of Model C with the exception of the interchangeable back. Model A makes 16 pictures 1⅝x1¼ on a roll of vest pocket film. Three different models are available with a choice of lens and shutter equipment. For further information see your dealer or write to Henry Herbert, 485 Fifth Ave., New York City.

AN ANNOUNCEMENT from Morgan & Lester, book publishers, states that 12,500 copies of the *Leica Manual* were sold during 1938, and 10,000 copies of *Miniature Camera Works* sold during the last six months of 1938.

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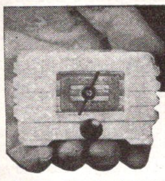

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To page 83 for full details

Darkroom Technique

(Continued from page 27)

in the finished photographs. Amateurs who keep things in a state of chaos because "that's the only way I know where anything is" wouldn't last a day in a Hollywood laboratory. Every tool and every movement must be routed toward efficiency.

A Lensland hint on efficiency, for instance, is the regulation that standing-up work be done at elbow height. Sinks and tables should come up almost to the elbow so the working position will be most natural. Amateurs who have had experience with cricks-in-the-neck and morning-after-working-in-the-darkroom hangovers will avoid those results of hours of continuous bending low and peering down by the simple expedient of "raising their standards" a few inches.

Equipment is always put in its proper place in Hollywood. No technician runs 15 or 20 feet from enlarger to trays. The trays are handy to his enlarger. And here's a hint from the boys in the studio printing rooms: work from right to left. That sounds paradoxical in a field where the normal is the familiar "reading from left to right," but there's a good and simple reason for it. The right (developing) hand is kept out of the trays that come after, thus eliminating the heartbreak occasioned by the vision of a stain where all was once beautiful. The right hand bathes the print in the developer and most Hollywood darkroom men wear rubber gloves on the right hand because of the constant exposure to developing solutions. Tongs and paddles are regular precautions in transferring prints from tray to tray and keeping them covered by the solutions.

Efficiency in the handling of equipment is applied also to materials. Paper, films, and chemicals are kept dry. Chemical dust is avoided by washing away immediately all trace of spilled wet or dry chemicals. Spilled solutions leave chemical dust after evaporation. Dry chemicals fly about and eventually land on drying negatives and prints with disastrous results.

Because every move and every penny must be accounted for, Hollywood standardizes on its papers, films, and chemicals. It does not stay "sot in its ways," however, just because it has adopted a certain product. Each still department, on the contrary, maintains its own experimental division, usually a round table of experts who discuss materials and ideas, work them out, adapt and test them until an efficient, usable technique is evolved. Once the standards have been worked out Hollywood sticks to its guns.

Studio purchasing departments, unlike many amateurs, are not seen in the photographic equipment stores thoughtlessly buying every new gadget, paper, film, or developer that comes out. Still departments make sure first. When experiment has proved the practicality of an "improvement," they switch to the new or different.

Equipment is bought for studio use on

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3 miles or 30

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That is the difference Infra D made on this view of New York. The larger picture shows clearly Hook Mountain, 30 miles to the North. While the smaller picture, made at the same time with ordinary film, barely shows the north end of Central Park. Whenever you want to cut haze, Du Pont Infra D is the ideal film for your miniature camera. Used with a filter, it has the effect of a telescopic eye. And still you can use it for ordinary scenes too. An Infra D negative made without a filter is nearly normal in appearance. Try a roll of Du Pont Infra D today. Your leading photo supply dealer carries it.

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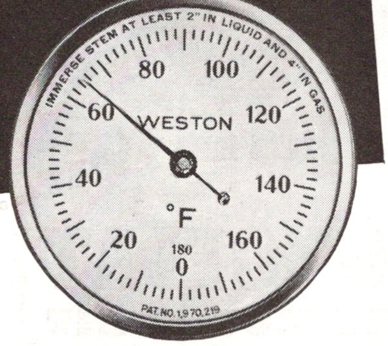

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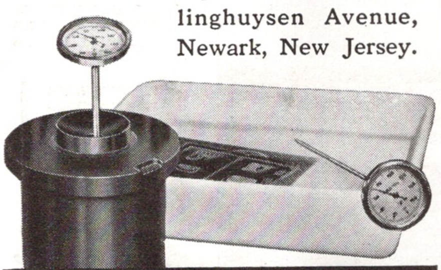

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the basis of efficiency and sturdiness. Enlargers are huge solid affairs that jiggle only in earthquakes (rare in California). Tanks and trays are also solid. Everything appears to have been bought to last for the next 20 years. The amateur can use the studio's idea in that respect, too. His way will be smaller but an eye to equipment with the attributes of solid darkroom citizenship will pay dividends in more than the matters of wear and ease of use.

Standardization, as it applies in the studios, can be exemplified in the five paper developers used at Warner Bros. Studio to handle all of its printing work. There are "hard" and "soft" developers for enlargements from 8x10 negatives. The familiar D-72 is used for enlargements from 35 mm negatives. Enlargements from 4x5 negatives have their own developer, as do all contact prints. All the developers are made up in five-gallon batches of stock solution and diluted one-to-one for use. The amateur who wishes to try the Warner developers may proportion the following formulas to his own requirements:

"Hard" developer for enlargements from 8 x 10 negatives—

Metol	1¼ oz.
Sodium Sulphite	15 oz.
Hydroquinone	4½ oz.
Sodium Carbonate	30 oz.
Potassium Bromide	3 oz.
Water to make	5 gal.

"Soft" developer for enlargements from 8 x 10 negatives—

Metol	4 oz.
Sodium Sulphite	36 oz.
Hydroquinone	8 oz.
Sodium Carbonate	20 oz.
Potassium Bromide	4½ oz.
Water to make	5 gal.

Contact paper developer—

Elon	2 oz.
Sodium Sulphite	28 oz.
Hydroquinone	8 oz.
Sodium Carbonate	28 oz.
Potassium Bromide	2 oz.
Water to make	5 gal.

Developer for enlargements from 4 x 5 negatives—

Metol	2 oz.
Sodium Sulphite	24 oz.
Hydroquinone	8 oz.
Sodium Carbonate	24 oz.
Potassium Bromide	4 oz.
Water to make	5 gal.

One thing advocated by the studio is 3-minute paper development which, it is claimed, gives better results than the more widely used 2-minute development. Because prints have a tendency to dry lighter than they look in the darkroom under the safelight, loss of tone and color is compensated for by the extra minute of developing time.

One "must" in the Hollywood laboratories is the careful mixing of chemicals. Precision, it is maintained by the experts, is particularly vital in that first of the series of precision steps. Proof of the necessity for exact measurement and weighing lies in the oft-proved truism that a dozen different developers may be made from the same formula by carelessness at a dozen different points, especially when mixing the chemicals. As each chemical is added, the solution should be stirred so completely that it leaves no undissolved grains to mix with the subsequent chemical and set up an *undesired reaction.*

Stop baths are a regular part of the studios' paper developing routine. Where

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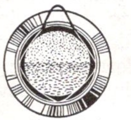

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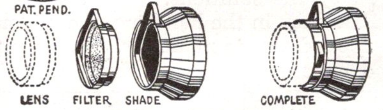

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INDEX TO VOLUMES 2-3

The Index to Volumes 2 and 3 (1938) of POPULAR PHOTOGRAPHY is still available. Readers desiring a free copy may send their request to the Index Department, POPULAR PHOTOGRAPHY, 608 S. Dearborn St., Chicago, Illinois.

waste may mean several thousand dollars added "overhead" each year, they have learned that it pays to take the precaution of a stop bath between developer and hypo. The hypo will then last longer. Amateur application of this pointer will mean pennies instead of dollars saved, but pennies are no small part of most amateur budgets.

In film development also the studios follow a rigid discipline. The addition of the 35 mm camera to the battery already carried by the still man on the sets brought its problems for a while. These have since been solved by assiduous experiment. Incidentally, it is not uncommon for the still man to carry a Contax or Leica, Graphic, Graflex, and 8x10 view camera. Each serves its special purpose on the sets.

Cut films are handled in stainless steel tanks produced to specifications in the studio craft shops. The tanks are water-jacketed, developing, hardening, and fixing tanks resting in a larger tank that allows the thorough circulation of running water around them for the purpose of keeping the temperature constant. The 35 mm roll-film tanks are set in deep trays in which water of the proper temperature has been poured.

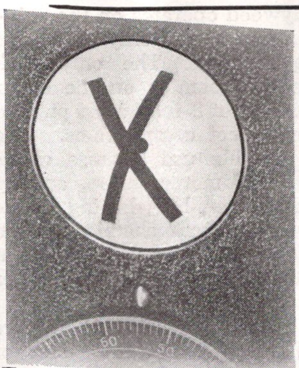
As in the case of paper, the "extra step" is taken in film development also. It is the hardening solution used between developer and hypo. Chrome alum, to which a few drops of 28% acetic acid have been added, is now in wide use. Washing is a fetish in Hollywood. Paper and film are bathed until every trace of hypo is gone. The same principle is applied to the hands, which are soaped and scrubbed as frequently as a busy surgeon's.

Drying of paper is done on ferrotype tins and cheesecloth drying racks. The tins, of course, are for the glossies, the racks for matte prints. Cheesecloth is stretched on simple frames of light wood which slip in and out of slots. Drying racks may be built to any size, depending on space and other arrangements in the amateur's darkroom. Prints are always placed on the cheesecloth face down.

Cut films are developed, hardened, fixed, and washed in metal film hangers. These frames are then hung on steel cables strung in "banks" in a room where warm air is supplied to dry the film. Roll films are viscose-sponged lightly once or twice after the sponges have been squeezed almost dry. Then the chamois is used cautiously. Clips at top and bottom prevent curling.

Ferrotype tins are cleaned and polished after every use. Careful check is made of the number of prints or films put through developer and hypo. Lighted red globes outside a door that is closed signify "Men at Work—Keep Out." That, too, is a hint Hollywood gives gratis to amateurs whose families "don't understand."

White walls give the darkroom men a comfort in working conditions unheard of even a few years ago. The safelights, naturally, are completely safe. If they weren't, not even black walls would help the men out of the ensuing fog of grey



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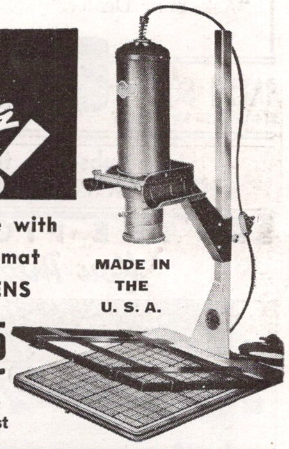

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prints. Hollywood operates on the principle that a darkroom is only as safe as its unsafest safelight. The only dark color in the darkroom is on the sinks, most of which are of 2-inch wood painted with chemical-proof compositions. One paint now in wide use because of its economy, ease of manipulation, calking action against water, long-lasting qualities, and freedom from chemical action is called Bitumastic. Available in paint stores in light and heavy grades, it ranges from $1.90 to $2.40 per gallon.

Having standardized its still picture problems, Hollywood has little fear of the abnormal situation. It handles a rush order for a spot news picture with the same dispatch as the newspaper itself. A few minutes in D-72, a hardening-fix, quick wash, quick dry over a hot plate after an alcohol bath, and the motorcycle courier is en route to the newspaper offices and syndicate headquarters with negatives of the latest celebrity to arrive at the Film Capital.

All of which is intended to explain that Hollywood is a fussy, cautious old maid in the darkroom. Maybe that's why nothing happens that shouldn't. And maybe that's why its photographs are acceptable throughout the world.—■

Questions and Answers

(*Continued from page* 62)

this reason, the more distant shot will, in theory, be the sharper, there being less tendency toward blurring. In actual practice, assuming that the subject is moving at no tremendous rate of speed and that the shutter speed chosen is adequate, the more distant exposure will probably lose some clarity due to grain and amount of enlargement, and the closeup is apt to be the sharper picture.

R. F. Z., Waukegan, Ill. During a recent cold wave my basement darkroom became rather chilly. Would this explain blistering which appeared on several prints I made during that time?

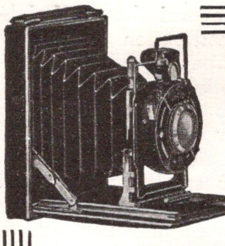
ANSWER: Temperatures considerably lower than those recommended by the makers of the products you use can result in considerable trouble in the darkroom. A hypo fixing bath especially can blister prints when it is used at very low temperatures. During severe cold snaps you should arrange some way of keeping your tray solutions up to the proper temperature.

W. K. Z., Cazenovia, N. Y. What does the circle of confusion represent, and how is it used in making a depth of field table for the lenses? Also, is the circle of confusion of a lens supposed to be any indication of the quality of that lens?

ANSWER: By way of reply to your first two questions we refer you to the article "Let's Fool With Formulas," beginning on page 38 of the March 1939 issue of POPULAR PHOTOGRAPHY. Regarding the indication of lens quality as being related to the size of the circle of confusion, it may be generally observed that the finest lenses are based upon relatively very small circles of confusion. The smaller the circle of confusion, the greater the *resolving power* of the lens, and the sharper the image which the lens transmits to the film or plate in the focal plane.

R. G. O., Paducah, Ky. I have been having trouble with fuses blowing out whenever I put as many as three No. 2 Photofloods on our house circuit. I am told that placing a penny in the fuse socket will prevent this, but wanted to find out how safe this practice is.

ANSWER: This method may seem to work satisfactorily, but it may also lead to a fire in your home. Do not try it! The best procedure here would be to have a licensed electrician inspect the wiring. If he deems the wiring system to be adequate he will advise you to install fuses of an amperage somewhat higher than you have been using. Otherwise you will have to use less light in your indoor photographic work.



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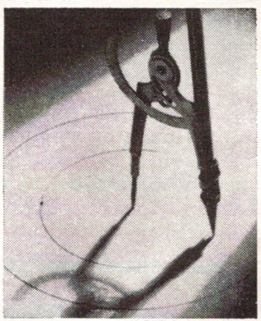

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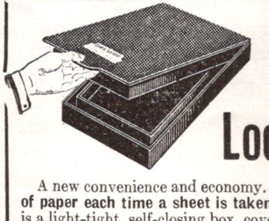

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Reticulation

(Continued from page 13)

Defender 777, which has a deadline for reticulation at 90 degrees Fahrenheit.

Any tropical developer with sodium sulphate formulas by Agfa and Eastman is indispensable in overheated darkrooms. Sulphate developer prevents swelling of the emulsion and keeps the structure of the gelatin firm. However, sulphate prolongs development. Therefore developing time must be increased 10 per cent.

The Eastman tropical developer known as DK-15 is recommended for developing between 75 and 90 degrees. Sodium sulphate when compounded with Kodalk (alkali) eliminates the danger of frills and blisters otherwise produced on the emulsion. No gas is formed when the developer contacts the acid hardening or fixing baths.

The Eastman DK-15 formula is as follows:

	Avoirdupois	Metric
Water (about 125° F.)	24 oz.	750.0 cc
Elon	82 gr.	5.7 g
Sodium sulphite, desiccated	3 oz.	90.0 g
Kodalk	¾ oz.	22.5 g
Potassium bromide	27 gr.	1.9 g
Sodium sulphate, desiccated	1½ oz.	45.0 g
Cold water to make	32 oz.	1.0 liter

(Dissolve chemicals in order given.)

When this developer is used at high temperatures, the film should not be rinsed in plain water, but in a tropical hardening bath. The following formula is recommended for temperatures from 75 to 90 degrees:

	Avoirdupois	Metric
Water	32 oz.	1.0 liter
Potassium chrome alum	1 oz.	30.0 g
Sodium sulphate, desiccated	2 oz.	60.0 g

A special acid hardening fixing bath, Eastman formula F-5, should be used 10 minutes for fixing. Washing films in water not over 95 degrees should be done for 10 or 15 minutes.

Solutions used under normal conditions are not the only agencies causing reticulation. Even when solutions have correct temperatures, the warmth of the air can damage film when it is not immediately immersed in the short-stop or fixer. Once softened by the developer, the emulsion is more sensitive to reticulation when exposed to the air unnecessarily long.

This precaution should be taken by workers who have a weakness for inspecting films by a safelight. While holding the film to the light and exposing it to room temperature higher than 75 degrees more than a second or two, reticulation is invited.

A second is the time limit for having an unhardened, unfixed film out of the liquid in reticulation-causing air. If developing must be done in a very warm room, film should go directly into the rinse, then the hypo. Inspection should be foregone, to avoid taking chances.

Under normal conditions, without tropical solutions, the necessary temperature control for staying reticulation is feasible

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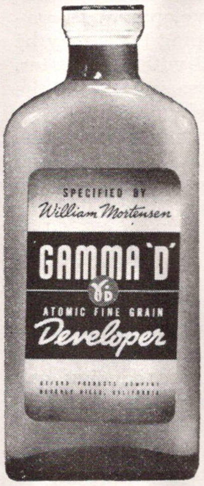

You'll never know—as long as you trust your exposures to inferior developers. A good camera and good film will result in good pictures—only if you use an equally fine developer—capable of producing the maximum potentials of camera, film and craftsmanship. Don't blame yourself until you've tried

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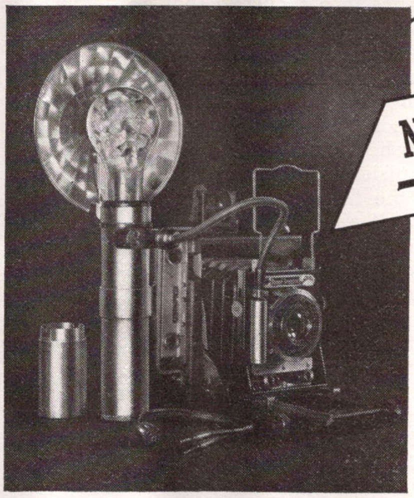

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in several ways. If tanks are used, place these in a sink or deep tray and let them remain surrounded by cold water until the temperature drops. If the water does not run cold enough, put ice in the water outside the tanks. Ice should not be placed in the solutions!

When trays are used, the same method is satisfactory for maintaining temperature. Because tray development is considerably faster, developing trays may be left in large trays filled with cold water. Ice may also be necessary to keep the trays cool during development.

An amateur seldom finds himself isolated from water cooling facilities and may not require extreme methods when using tropical developers. However, hypo crystals are a handy cooling device when ice is unavailable. A quantity dumped into water has a cooling effect. This is a method used in emergencies by army and scientific expeditionary photographers.

Aside from developing, reticulation also occurs in the process of reducing and intensifying films. The previously mentioned methods of temperature control should be employed during these processes whenever high temperatures prevail. When facilities prohibit temperature control of reducers and intensifiers, add a 10 per cent formaldehyde solution to them. This produces physical hardness and increases the film's ability to resist reticulation. The emulsion, however, remains soft enough for the solutions to work.

Once the film has reticulated, little can be done about it. There is perhaps one chance in a thousand that an unaffected print can be made from such negatives.

In case of a prize negative or a shot that cannot be rephotographed, soak the film thoroughly in water, whether dry or not. Then squeegee it to a piece of polished glass with water underneath, emulsion side down. Hold up one end of the film as it is being squeegeed to permit air bubbles to escape.

This flattens the reticulated emulsion and resecures it to the base, if you have luck. Sometimes it is possible to print a reticulated film wet without having defects print through. This, of course, depends entirely upon the severeness of the reticulation.

All in all, your thermometer is your infallible guide. It not only governs developing time but also warns you when reticulation is imminent.

Remember, 75 degrees is the danger mark. Stand by the old adage: "Don't take chances!" Even if you are in a hurry, don't rush films through uncooled solutions.—■

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WHEN it is necessary to trim a number of different prints so that all will have exactly the same border width or margin, a transparent celluloid rule or triangle and razor blade are the simplest to use. It is only necessary to scratch a line parallel to the edge of the celluloid. This line is placed on the picture edge, rule and print are held *tightly*, and the white border trimmed with the blade.—*Steve Lozanoff, Johnstown, Pa.*

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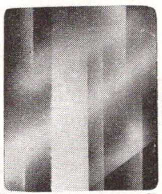

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Assignment: War

(Continued from page 17)

and unwind a few color exposures was almost overwhelming, but fortunately not quite so, as a quick glance to the rear told me that I was not without an uninvited escort. The latter proved to have been a wise move, since another foreigner, also American, believing he could work his miniature unnoticed, had an unpleasant six hours trying to explain his failure to observe the regulations. Not until his film had been developed and his personal belongings diligently searched was he allowed to land. Visitors to Japan must realize that they are coming to a country which is at war, every foreigner is suspected, and wartime regulations restrict the use of cameras.

After settling at Tokyo we were formally introduced to the heads of the various governmental departments concerned with our activities, notably the Information Section of the Foreign Office, Intelligence Sections of the Army and Navy, and of course the Police. No foreigner, as we soon came to understand, is ever free of their surveillance, including the rigid censorship of all mail and cables.

After ten strenuous days in Japan, the light and climate of which somewhat approximates that of New York, we checked our shooting schedule and found that we had a complete photo record of the entire government organization, including the Prime Minister, Cabinet officials, high ranking army and navy officers, hotels and office buildings, the military training which begins at childhood, the intensive training of reservists called to active service, factories, munitions arsenals, department stores, and in fact a great deal more than we had ever expected to be allowed to photograph. But it must not be thought that we came by these things without trouble.

Quite to the contrary, our troubles came from the very beginning and lasted throughout, and at one point, when a deadlock seemed to have been reached in our negotiations, it was decided that if we could not get some better form of co-operation from the Japanese we would board the next ship for Hong Kong, travel inland by Eurasian Air Line and join forces with the Chinese. Fortunately for us, the threat to do this brought the Japanese to our way of thinking and was the deciding factor in many future disputes. No foreigners before us had ever been granted this same co-operation and we accomplished our end only by literally overcoming active resistance at every stage of the proceedings.

Each night we were required to list what we wanted to photograph the following day, and on the next morning, when our escort of an army and navy officer put in their appearance they told us which of our requests had been approved and which had been disapproved, but never the reasons behind the decisions. Operating in this manner, clearly stating what we wanted and why we wanted it, then strictly adhering to our

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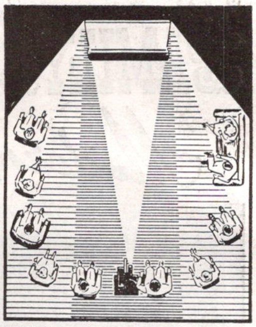

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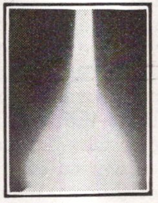
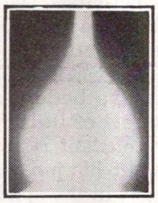


Light reflected from ordinary screen.



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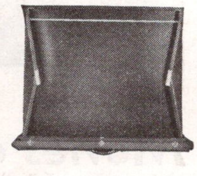

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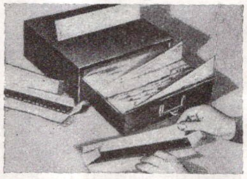

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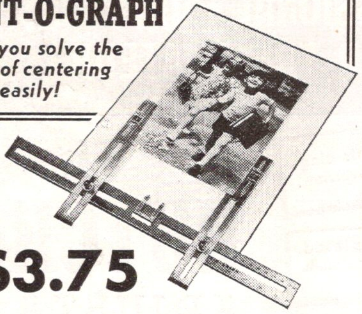

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bargain and never attempting to outsmart our hosts, we at least kept the argument on an even keel. A list of the things we were forbidden to photograph would be too long to include in this report.

Leaving the hotel after an early morning breakfast, ours was not a small party. In addition to the army and navy men, we had with us two government photographers using cameras similar to our own, who duplicated every shot we made; a Foreign Office interpreter, and a military policeman. The latter chap spoke no English and his duties seemed to consist of making copious notes concerning all our activities, what exposures we made, the kind of cigarettes we smoked, and even, I suspect, what we ate for lunch. But Sherlock, as we called him for want of a better name, proved to be a decent sort of little fellow. Whether it was our constant ribbing or whether he, too, thought his job was a wasted effort, he soon got in the spirit of things. When he should have been making mysterious notes in his little book he was more apt to be found setting up a tripod or changing flashbulbs in one of the extension sockets. Even the government cameramen tired of the game after a few days and relaxed to the extent of promoting themselves to the roles of assistant directors. Once these people gained confidence in us, our unit began to function like a well-oiled machine and the same men who were assigned to keep us in hand were now acting as spearheads in our attacks on government and business leaders for pictures.

Night meant developing time. Out came the changing bags, monel tanks, M.Q. tubes, and timing clocks. Our story was too valuable to be spoiled by a synchronizer which might have got balky, a shutter which failed to function, or a speck of dirt on a pressure plate which might leave a scratch large enough to spoil a day's shooting. We were moving ahead too rapidly to stop for retakes and before us, like an apple dangling on a cord at a Halloween party, was the war in China and particularly the fight for Hankow, the Chicago of the Orient.

A question which might well be asked at this point is whether the Japanese at home are as camera conscious as those seen here in the United States. The best answer is this—loading into trucks on a hurry call to a first-aid station at the front I saw scores of Japanese Red Cross nurses. Only three were without cameras over their shoulders. The same is true of soldiers in the field. Film is usually developed at portable darkrooms scattered over the length and breadth of Japanese occupied territory. The men who operate these darkrooms are commercial finishers, drafted into military service, and paid by the individual for the work done. The results I saw were far from satisfactory, probably because of the high mineral content of the water.

The camera used mostly by the Japanese is one of their own construction, about the size of a Leica, and combining *some* of the features of that camera and the Contax. All their film is of the home-grown variety because of an embargo

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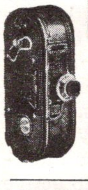

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which prohibits the importation of foreign film. Whether this film is as good or better than our own is something I never learned, having fortunately carried a sufficient stock, but the persons to whom I gave samples of the new Eastman and Agfa emulsions always came back for more. Kodachrome they had never seen before, and probably never will, since another regulation, and one rigidly enforced, forbids anyone to ship undeveloped film out of the country.

Finally the day came when we could write *finis* to our story in Japan. Three days on the boat from Kobe to Shanghai. Nothing to do but drink Scotch and soda, talk to the few other English-speaking passengers (no pretty girls), and always keeping a camera and exposure meter at hand, judging light values, distances, touch focusing by counting the turns of the knob. (Try it some time, so that when the emergency arises your camera will be focused and the lens properly adjusted without a thought to the operation). That's how every news photographer must operate if he is to succeed, which he can only do by concentrating his interest on the picture before him, not the camera in his hands.

Shanghai—at last. And how different from Japan. No delegation to meet us here. No "Sherlock" to kid, no friendly interpreter. They were left behind. In our pockets only a letter requesting that we be given any courtesy consistent with military practice, and a talisman from the Asakura Shrine, blessed by the Temple Priest to ward off bullets and keep us in good health, free from harm. (As a double check on this we were vaccinated against smallpox, cholera, and typhoid.)

We introduced ourselves at military headquarters and soon came to know that if we were to get along with these people we must understand, as they surely did, that a war was being fought not far away, and that in addition it might be an excellent idea to learn something more of military etiquette before serious trouble set in. Before leaving headquarters we succeeded in having three men assigned to us for the trip to the front, a Lieutenant Colonel in the army, a Commander of the navy, respectively assistant chiefs of the Army and Naval Intelligence Services in Central China, and an army interpreter. The latter meant well but unfortunately had such a slight smattering of English that the value of his services to us was often questionable.

We were getting closer to the shooting zone now. This was reflected in the attitude and demeanor of our escorts. No horseplay with these men. None of that business of practicing judo on the Colonel or the Commander either. War is a man's game, and from infancy these men had been taught that to serve their country best was to wear the uniform of the armed services. We learned, too, that an armed sentry on duty represented the person of the Emperor. In short, we learned to bow—and deeply.

No arguing with these fellows. No lists to make up of what we wanted. They told us what they wanted us to

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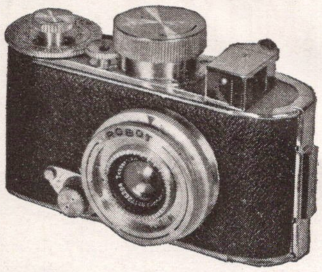

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Then into a Naval Patrol bomber for the flight up the Yangtze. Up to the place where we were to receive our baptism of war. Never before such a ride as this one. Visibility zero. Ceiling zero. A hundred feet below us a swirling, muddy river. Ahead only mountains and rice fields. A coughing, sputtering motor did not add to our enjoyment. Then years later a clearing sky ahead. Up we went, six, seven, eight, then nine thousand feet. Too cold even to shiver. Nothing to photograph here. Just the age-old earth of China below us. There's Nanking, way off to the left. Then Anking. Then far ahead in the distance hundreds of tiny specks. As we came closer we saw what they were. Japanese fishing smacks, pressed into service for the transport of men and supplies. On we went, and no question about those ships just coming into view around the bend in the river. River gunboats, destroyers, and mine sweepers, every one flying the flag of Nippon, and all firing at Chinese shore batteries.

We made a wide circle and came down at Kiukiang, five hundred odd miles from Shanghai. Five hundred miles of battleground. Five hundred thousand killed. Every inch of this ground is saturated with blood. Around us now are unfamiliar scenes. Marching troops. Prisoners at work repairing roads, guns booming in the distance, and the heavy thuds of aerial bombs. Be damned glad you stayed home.

Pictures by the hundreds. A photographer's Paradise. Almost a dream come true. Almost? Yes, almost. Or have you forgotten those army and navy men who came with us and are sticking like leeches, telling us what we can or cannot shoot.

Here are guns to be fed; wounded to be shoved to the rear; replacements to be pushed to the front. A war to kill, an advance to capture enemy territory. Not a show to make pictures. Certainly not a war in the best Hollywood style, where opposing troops charge into battle with colors flying at the sound of the bugle. These men wear uniforms purposely blended to camouflage their presence. They don't go charging crazily into enemy fire. They crawl on their stomachs, stop to fire, then crawl some more.

But this is not intended to be a war *story*. You readers are not interested in covering a war, else you, too, would be cluttering up the landscapes of China

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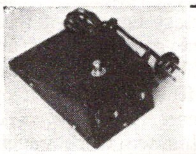

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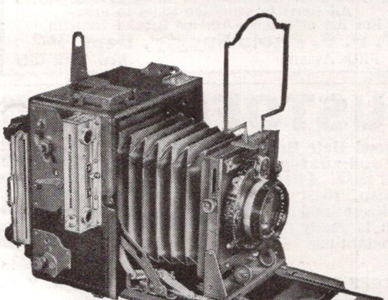

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With the fall of Hankow and its occupation by the Japanese on October 26th, after a year of heavy fighting to capture the city, we had our first opportunity in several weeks to overhaul our equipment and make developing tests. Our cameras had been rained on, fallen on, and kicked. A bucket of yellow Yangtze water, poured from one canteen into another until the greater portion of the sediment had been discarded, then two M.Q. tubes, the changing bag, and half an hour later our worries were over. No scratches, no buckles.

At Hankow, where they had been making their headquarters for many months, attached to the Chinese Army, we met several other cameramen, all considerably the worse for wear. Among them was one old friend from the States, whom I scarcely recognized. Eric Mayell, Fox Movietoner, a husky one hundred and seventy pounder, whom I had last seen riding atop his sound truck at Los Angeles covering a baby parade six years before, now here in this war-ridden place, face much thinner, and his body many pounds lighter. Walter Bosshard of Black Star, and George Krainakov of Universal Newsreel, were two others who had stayed on the job through all the heavy firing. All three had been in the thick of it since the day the first shell was fired, two years before. Mayell was one of the two newsreel men aboard the American river gunboat *Panay* when it was bombed and sunk. He had held his breath as he paddled for shore while Nipponese planes flew low and sprayed the water with fast firing machine guns. Now here he stood on the river bank at Hankow, waving, as we came ashore in an armored Naval Landing Party boat. "Where in the Hell have you fellows been all this time? We thought you were never going to get here." To the naval intelligence commander accompanying us he complained that although the Japanese pilots had done a fair amount of bombing they never struck twice in the same place, and how in hell was a fellow expected to make good pictures unless he had some idea of where the bombs were going to hit.

Pictures of the last heavy bombings, which Mayell and the others had made just a few days before, as well as scenes of fighting on the edges of the city, were on their way to the Pan American base at Hong Kong, so they thought. The Japanese could well afford to laugh up their sleeves at this. They knew that these films were being carried out by Newsreel Wong—and Wong had been the object of an intensive and successful search by a squadron of pursuit ships.

The fall of Hankow marked the successful conclusion of our story, and today is rated by the major wire services as one of the ten best news stories of 1938. Saying good bye to Mayell and the others, whom the Japanese would not allow to leave, we boarded a seaplane and made the return flight to Shanghai. Two days later, waiting for a boat to take

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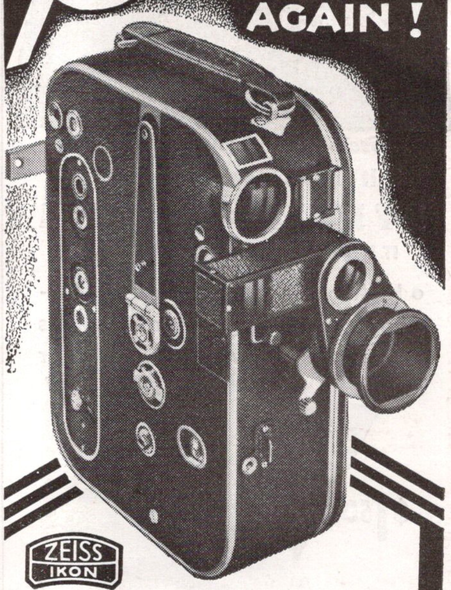

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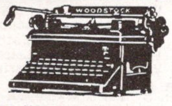

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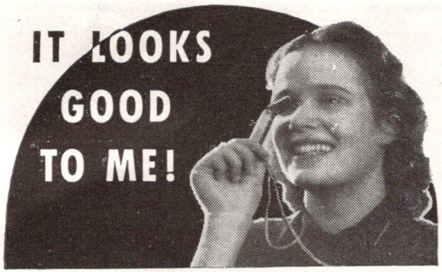
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us back to Tokyo, we read a wireless dispatch that all the foreign correspondents and cameramen at Hankow, eighteen in number, were to be flown to Shanghai the following day, but that their camera equipment and personal belongings would be left behind. We also learned for the first time why the Japanese had been so relentless in their search for Newsreel Wong. It was because they believed that while in hiding he had made a shot of the "extermination" of a number of Chinese prisoners who, with hands tied behind them, had supposedly been shot or stabbed in the backs and pushed into the Yangtze.

Our job completed, Jurgens and myself were anxious to reach Japan, check through again with the censor, and load our bags onto the boat bound for home. We arrived at Yokohama on November 10th. There Jurgens found a cable from the editor of *The March of Time* which both elated him and nearly broke his heart. He had done such a good job that it had been decided to keep him in the Orient indefinitely. He was delighted that his work had been successful, but despaired of ever again seeing his sweetheart, whom he had promised to make his wife on Christmas Eve. Our intelligence men nobly came to the rescue and proffered the use of either the army or navy radio so that he could be married by proxy, either with voice or dots and dashes—but he would have none of it. When last heard from, nearly a month ago at this writing, he was deep in the interior of Manchuria, where the temperature was twenty-eight below, and having the devil's own time to keep his camera from freezing.

Some of you may rise to enquire, "What developer did you use, what film, lens stop, etc.?" My answer is that it doesn't make one bit of difference. Each picture which comes before you requires individual handling. Get a good exposure meter, preferably of the photoelectric type, and practice with it under every type of light condition, until you are letter perfect. Before long you will unconsciously begin to think of light in terms of film speed and lens aperture. Excellence of technique and a proper understanding of highlight and shadow follow in the natural course of events. Learn to see the picture in front of you as a finished print. Study these few fundamentals and, unless you intend to go scientific and be just another darkroom photographer, you'd best fasten yourself to one film, one developer, one paper. If your ambition is to make pictures, let the other fellow fiddle around with messy chemicals, gammas, and fancy looking graphs. As the years roll by you will come to understand that your success as a news cameraman depends largely on these two things: (1) The ability to know what makes a picture, and to recognize a picture when you see it, and (2) a knowledge of people, how to deal with them, and above all how to get them in front of your camera.

I can't recommend news photography as a profession unless you are so interested in picture making that you find the work a real pleasure. It's often tough

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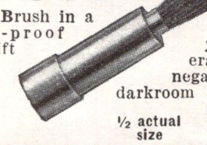

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going, sometimes tedious, and once in a while a little hard on the eyes. The pay isn't a great deal and the discomforts are many, but if your mind is made up then get this idea firmly fixed in the back of your head, and keep it there—*never give up*. No picture is impossible. Because some one says it can't be done don't be discouraged. Try harder.

That's my story. Thanks for listening, and please don't embarrass me by asking why so many of the four-thousand-odd negatives shipped out of China were made while I lay on my stomach. When a Japanese soldier is killed in battle he goes straight to Heaven. I know where I'm going.—▶

Darkroom In A Suitcase

(Continued from page 15)

side me. At that time of year Rio's temperature was not high enough to necessitate ice, so I had only to go to work.

My enlargements were executed in the same manner as I do them at home, with the one exception that my prints were washed in the bath tub instead of in a fourth tray. After washing, I wiped the prints with the split viscose sponge and set them out on a clean piece of wrapping paper to dry. In the mornings I trimmed some of them with the scissors, slipped them into the telephone directory to uncurl, and started out for another day of seeing and photographing Brazil's most enchanting city.

Some of the finest enlargements I have ever made were printed in the bathrooms of some foreign hotels. Naples, Vienna, Budapest, Berlin, London, Paris, and other cities are places where I have set up my portable darkroom. And when I've been in these foreign cities, how glad have I been that I took my darkroom along on my travels!

No one should ever leave his darkroom at home when he goes on a trip. Those who travel professionally may make traveling darkroom work a fine art. And for those who wish to commercialize on their photography there is a certain advantage of sending in their prints from a foreign country. It is certain that you'll never find me away from home without my darkroom in my suitcase.—▶

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RECENTLY I tried a household bleach as a negative reducer and, to my surprise, it worked fine. The bleach is nothing more than a solution of sodium hypochlorite and is procured at the chain stores under such names as *Kleen-Lin*, *Chlorox*, etc.

The procedure is simple. Soak the negative in clean water for about 10 minutes, then transfer it to a bath made up of 1 part bleach to 16 parts water. When the desired density is reached the negative is washed for 15 or 20 minutes in running water and carefully dried. The results I have obtained by this method are far superior to those I've had by using a standard reducer.—*John O' Connell, Brooklyn, N. Y.*

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MAKE money in photography. Learn quickly at home. Spare or full time. Easy plan. Previous experience unnecessary. Common school education sufficient. Interesting booklet and requirements free. American School of Photography, 3601 Michigan Ave., Dept. 2251, Chicago.

AMATEUR made camera pay $500.00 with original idea. You can too! Sample and complete instructions $1.00. Camfan, Box 252, Round Rock, Texas.

LEARN Photo retouching. Tuition reasonable. Best references. Heyne School, 504 Charles Bldg., Denver, Colo.

BOOKLET, "Picking Checks from Newspapers and Magazines," 25c. Nine amateur Camera-Journalists tell how they make Camera, Typewriter pay. Holden Publishers, Germantown, Tenn.

MISCELLANEOUS

FOR SALE: Rare Calotype Paper Negatives 18x22 taken 1859 in India, $5.00 each. City Museum, Vancouver, B. C.

CASH for used Candid and Movie Cameras, Projectors, Binoculars, Microscopes. Elman's, 2300-PP, VanBuren, Chicago.

WANTED: Excellent broadside enlargement, deer, reindeer. Write data: J. Hayes, 158 Park, Williston Park, L. I.

SONGWRITERS! Outstanding, amazing offer. Hibbeler, C-16, 2154 No. Avers, Chicago.

WANTED: Sport and beach scenes, state price. Thos. Pettigrew, Catlin, Ill.

PHOTOSTAMPS: 1c each from your favorite photograph. Use on QSL's, etc. Hi-Gloss finish. Minimum order $1.00. U. S. Ultra Service, Upper Sandusky, Ohio.

TRADE: Photo magazines, books. List $100. Warhurst, 1915 K., Washington, D. C.

PHOTO FINISHING

DOUBLEWEIGHT Enlargements. Glossy or semi-matte, 8x10, 35c. Four, $1 (negative). Walter Asklund, Renovo, Pa.

STATUETTE made from your snapshot. Send $1.00 and negative. Berco Products, North Canton, Ohio.

KODABROM Enlargements: 5x7—20c; 8x10—35c; 11x14—75c. Salon-Lab., 1118 W. Church, Champaign, Illinois.

35 MM FILM Developed. Each good Frame enlarged to 5x7—$2.00, 3½x5—$1.50. Coburn's Photo Service, Sycamore St., Brockton, Mass.

35 MM FILM developed, 3x4 enlargements $1.50, mounted $2.00, 6 5x7—$1.00, 4 8x10—$1.00, special 11x14 salon mounted $3.50. Professionals, Amateurs send for free price list. Speedy Service. Glenwood Labs. 1457 Flatbush Avenue, Brooklyn, N. Y.

DELUXE enlargements for the discriminating amateur, $1.00 brings 4, 8x10; 6, 5x7; 10, 4x6. Imperial Foto. Lockland, Ohio.

SPECIALIST—In oil coloring photos, reasonable. Ruth Justice, Quakerstown, Pa.

35 MM ROLLS fine grain developed, 36 3¼x4½ enlargements $1.49. Photolab, Box 5544, Dept. P, Chicago.

35 MM fine grain developed. 36, 3½x5 enlargements $1.49. One 5x7 enlargement free. MacKichan, 520 Virginia St., Buffalo, N. Y.

35 MM FILMS. Fine grain processed. 36 exposure rolls fine grain developed and each good negative enlarged to approximately 3½x4½ inches on double weight portrait paper—best quality work—complete service only $1.50. Send for free mailing bag. Minicam Photo Labs., La Crosse, Wis.

35 MM ROLL developed, 36 exposures enlarged 2¾x4¼, $1.49 complete, postpaid. Wolf Studios, 339 Magnolia, Piedmont, Calif.

PHOTO SUPPLIES

MONOCHROM 16 mm or 8-8 mm reversible film, Weston 8, 99c per hundred in 400 foot rolls laboratory pack. 100 ft. 16 mm, $1.25; 100 ft. 8-8 mm, $1.35. Also 100 ft. 16 mm dalite loading, $1.85; 25 ft. 8-8 mm dalite $1.00, including processing and return. Boyd Laboratory, Ashton, Ill.

GLASSINE envelopes—2⅝x4½, 100—25c postpaid. Lutz, 414 Avery, Syracuse, N. Y.

NEW Photoflood Control Unit. Makes possible running lights half brilliancy until ready to make exposure. Saves eyes. Pays for itself in increased bulb life. $3.50 postpaid. W. Erdman, Santa Cruz, California.

NEW! Filters! Complete experimenter's outfit. Five colors. Guaranteed. $1.00. "Exper-Filters", 835 Alberta, Santa Barbara, California.

USED 200 feet 16 mm. Cartoons etc. $3.25 a reel. Loboy, 3111 N. Drake, Chicago.

RIFLES, Shotguns, Target Pistols and other firearms accepted in trade at liberal allowances on Leicas, Contaxes, Graflexes, Weston Meters, and all photographic equipment, motion picture and "still." Authorized dealers for every leading manufacturer, including Zeiss, Leitz, Eastman, Bell & Howell, etc. Write for bargain catalog. National Camera Exchange, Established 1914, 11 South 5th St., Minneapolis, Minn.

TRADE, buy 16 mm films, state length, subjects. 1812 Market St., Philadelphia, Pa.

35 MM RELOADED cartridged 666 using Eastman, Agfa, Dupont new fresh stock, 50c. Ruby Film Co. P. O. Box 935, Hollywood, Calif.

SALE—New Praxidos Enlarger, 2½x3½ and smaller. Cost $62.50. Sell $35.00 cash. T. Unger, 330 Vincent St., Alliance, Ohio.

WOW!!!

Just take a look at this unsolicited letter we received from a reader who took advantage of POP PHOTO'S special classified rate to readers (non-commercial).

"I wish to express my astonishment at the results of a $1.00 classified ad which I inserted in your recent issue. I advertised for a candid camera, and received 2 telegrams, a letter and a phone call the same day I received my copy of the magazine. Since then I have received 2 more telegrams, another phone call, and 33 letters and postcards. Your publication sure brings results, and HOW!"

Carl H. Engelkamp.

Development Control

HERE is a direct print control process which is very easy to use. It requires less experience, is more controllable than most others, and its use is most admirably suited to negatives of extreme contrast, of which a detailed print is desired.

Expose the print or enlargement for the densest parts of the negative. Develop to the point where the greatest detail is obtained in the greater part of the print. There will now be a few white areas, where the negative was densest. When the print reaches this stage, it must quickly be removed from the developer and rapidly washed in plain water to stop development. Wipe excess water from the print, and with a brush, apply developer to the still undeveloped areas. This must be done rapidly to insure even development. The developer will not leave rings, as the print, being wet, allows it to spread evenly and blend into adjoining areas. When the desired stage of local development is reached, the prints must be washed in water as before and finally fixed.

A little experimenting will show this to be a very versatile method of control. It can easily be used in place of dodging and is more certain.—*John W. Schnapp, Philadelphia, Pa.*

Focusing an Enlarger

THE quickest, handiest method of focusing an enlarger that I have found is to photograph a full-page newspaper ad and use the negative as a focusing guide. The ad should contain large, bold letters which are handy for focusing small enlargements, as well as a generous amount of smaller letters, illustrations, and borders which work fine for the larger size blow-ups.

Placing the newspaper page in direct sunlight an exposure of 1/25 second at *f* 16 on orthochromatic film will give a good negative which should be kept handy to the enlarger at all times.—*Harold Armistead, Easley, S. C.*

Clouds in Your Pictures

(Continued from page 59)

This leads up to a second type of picture which is not a silhouette. To this group belong pictures with little or no foreground. Take the picture with orthochromatic film, and no filter. For this type it is best to have little foreground. A ski jumper, pole vaulter, or diver against the sky are fine. A blank white sky in such pictures is ideal for the purpose of adding clouds. Back- and side-lighted pictures printed for shadow detail give lighter skies than flat light (sun behind the shoulder).

Clouds are added to such pictures in almost the same manner as to the silhouette. In this case, however, the figure must be placed against or in front of a part of the cloud which is lightest in tone. The cloud, being light, will not register on the figure. If there is any foreground it must be held back during the exposure for the clouds.

Clouds covering dark objects such as trees, leaves, etc., are not liable to show the effects of double exposure unless the clouds are very contrasty. For pictures of this second type use paper with good contrast, or about one degree above the average. The effect of double exposure will reduce this to about normal.

We are now ready to add clouds to pictures with detailed foregrounds. Blank white skies are desirable. Project the image on a sheet of thin cardboard larger than the picture and trace the horizon or skyline with a pencil. Cut the cardboard on this line, saving the lower part or ground portion. Place a red filter on the enlarger. Put the sensitized paper in place and make a mark on each edge at the skyline. Make the exposure.

When making the second exposure (the one for the clouds) hold back the foreground with the cardboard. The marks at the skyline will guide you. Keep the cardboard moving up and down ¼ inch so there is no sharp line to show the effect of shading. Tree leaves in the sky will not matter. Expect to spoil a few sheets of paper here as you cannot get perfect results every time.

The last method offers possibilities for fine work limited only by the skill of the operator. Try your hand at adding clouds to your pictures and you will find the results most gratifying.—▶

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Film transport knob. Automatically cocks the shutter, advances film and operates exposure counter.

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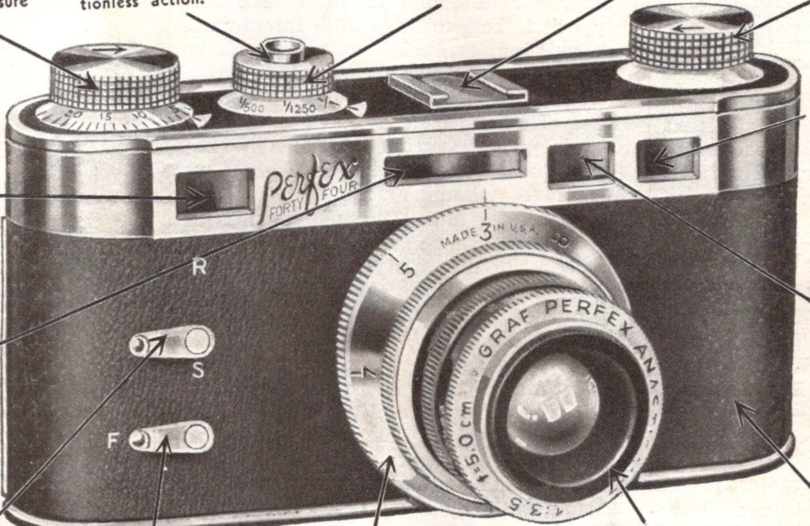
Accessory clip for auxiliary finders to match telephoto lenses, etc.

Film rewind knob. Extra large with knurled grip.



Long base (3½") split image coupled range finder for automatic focusing.

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Telescopic through-the-camera finder. Shows a brilliant image.

Die cast, light weight aluminum case, leather covered and separable for easy loading.

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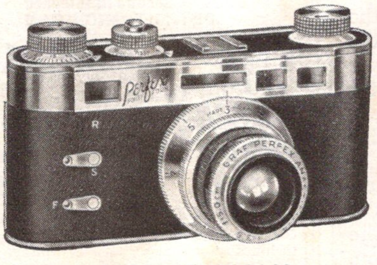
Anastigmat lenses of F:3.5 or F:2.8 aperture. Lenses are interchangeable for telephotos, etc.



SPECIFICATIONS

Leather covered die cast aluminum case with chrome trim. Camera body measures 5 9/16 x 1 9/16 x 2 23/32 inches, weighs approximately 22 ounces. Loads with standard 35mm film, 18 or 36 exposure, for pictures in black and white or color. All parts are accurately machined and fitted, assuring smooth trouble free operation.

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